February 1991
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AMIGA WORLD

A500 Upgrade Guide! Part 1—p. 46

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- 9 Tips For Better Interactive Shows
- How To Avoid Copyright Hassles

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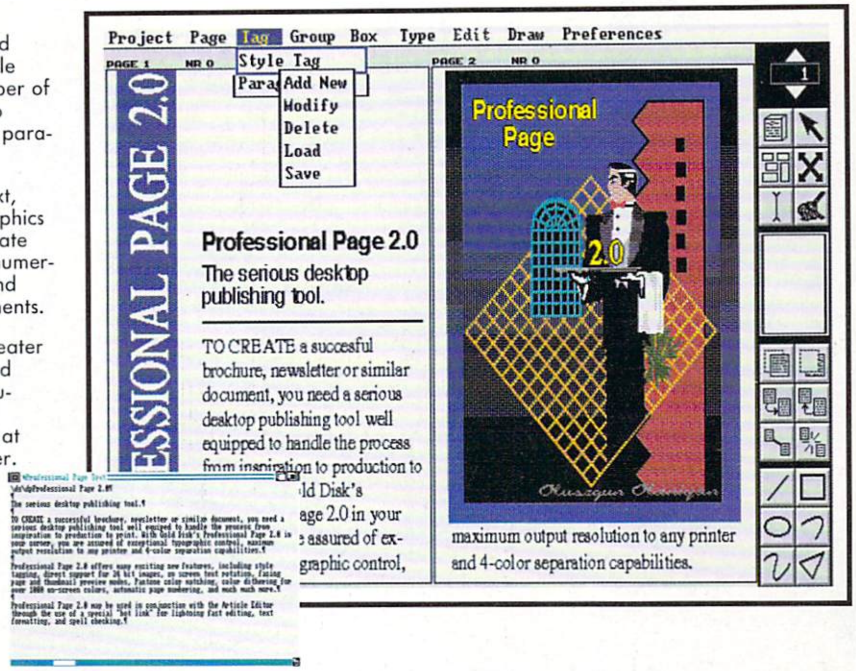
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C·O·N·T·E·N·T·S

FEATURES

ARTICLES

COLUMNS



*We're calling our February theme "Making Multimedia." Let's face it, **everybody's** doing it now. But, remember, the Amiga did it first—which is why **AmigaWorld** has been covering multimedia for the past two years now. We think the Amiga also does it **best**, and that's why the solution to putting the multimedia puzzle pieces together on our cover (above) is—you guessed it!*

DEPARTMENTS

REVIEWS

GAMES

COVER PHOTOGRAPH BY ED JUDICE

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AmigaWorld (ISSN 0883-2390) is an independent journal not connected with Commodore Business Machines, Inc. *AmigaWorld* is published monthly by IDG Communications/Peterborough, Inc., 80 Elm St., Peterborough, NH 03458. U.S. subscription rate is $29.97, one year; $46.00, two years; $64.00, three years. Canada $38.97 (U.S. funds), one year only. Mexico $38.97, Foreign Surface $49.97, Foreign Airmail $84.97 (prepayment is required on Foreign Surface and Airmail subscriptions in U.S. funds drawn on U.S. bank). All rates are one-year only. Second-class postage paid at Peterborough, NH, and at additional mailing offices. Phone: 603-924-0100.

Postmaster: Send address changes to *AmigaWorld*, Subscription Services, PO Box 58804, Boulder, CO 80322-8804. Nationally distributed by Kable News Co. *AmigaWorld* makes every effort to assure the accuracy of articles, listings and circuits published in the magazine. *AmigaWorld* assumes no responsibility for damages due to errors or omissions.

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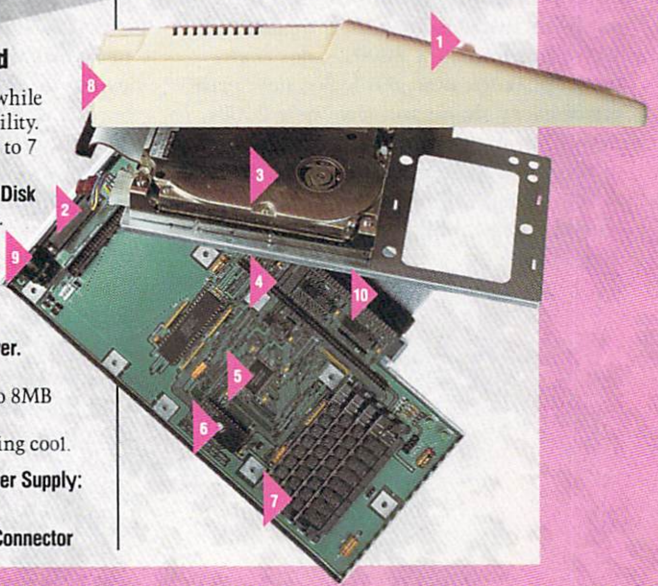
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CHIEF CONCERNS

In between computers: the quirks, frustrations and challenges of upgrading.

I'M SITTING BETWEEN two Amigas, with one monitor pointed at my face, the other at my back. They are both on, issuing enough radiation to put my unborn progeny in slight peril. The machine that is producing this month's harangue is an old A2000 with no accelerator, no flickerFixer, and nothing else of real significance.

Behind, beaming its signal into my spine, is a spanking new, 25Mhz A3000, with a 100-meg hard drive and 18 megs of RAM. And if I turn to the side to talk on the phone, the old and new monitors beam their effulgence into both temples.

Friends, especially those from the PC market, sometimes ask me why I have 18 megs of RAM. I say it's because someone was nice enough to buy it for me.

In fact, someone was nice enough to buy the entire *AmigaWorld* staff $72,000 worth of Amiga equipment, which arrived in a steady stream and was conscientiously installed by a local dealer. We've got four new 3000s, color scanners, speakers, new gen locks, new printers of every shape and size, new 2000s, new 500s, memory, floppies, cables, and, of course, a huge pile of empty boxes.

Somewhere, some sales rep in the Northeast saw a blip, and that blip was *AmigaWorld*.

So why is this editorial being written on an aging, underpowered wimp of an Amiga that could flake out at any minute? Some of it has to do with the fact that 2.0 is not quite finished. Part of it has to do with my lack of a power strip, so the speakers aren't set up. And some of it has to do with the fact that I'm lazy, and haven't yet moved over all my files.

So then you ask; why is the 3000 turned on if it isn't doing any work? Maybe it's because I'm trying to learn about the new operating system, so I toy with the applications that are already loaded. Maybe it's to get the feel of the speed, and to get used to the cursor flying off the screen with the slightest touch of the mouse. Maybe it's just to show off.

A lot of people are also slow to change. Upgrading software can be difficult enough. Upgrading a whole computer with a new operating system is even more involved. The A3000 is a superb machine, but it is not the easiest to switch to. With its slim form factor, some boards won't fit. Some programs won't run under its new operating system, forcing users to boot up 1.3. And some timing-dependent software—such as copy-protected games—won't run at all with its 68030 processor. All this slows down the inevitable move to the next generation.

We know Commodore is working on a program for software compliance, and God knows they are trying to polish off the operating system. We're going to pitch in as well. In the April issue, we are planning an article on A3000 compatibility that will allow owners and potential owners of the 3000 to figure out what will and won't work.

We don't have time to load 1,200 programs and test dozens upon dozens of boards. We've also got to eat lunch, get out a magazine, and talk to readers on the phone. And since the operating system is still changing, the software results would be inaccurate as soon as they're published, anyway. What we will do is generally describe why some things work and other things don't. A quick call to your vendor of choice should help sort out the specifics.

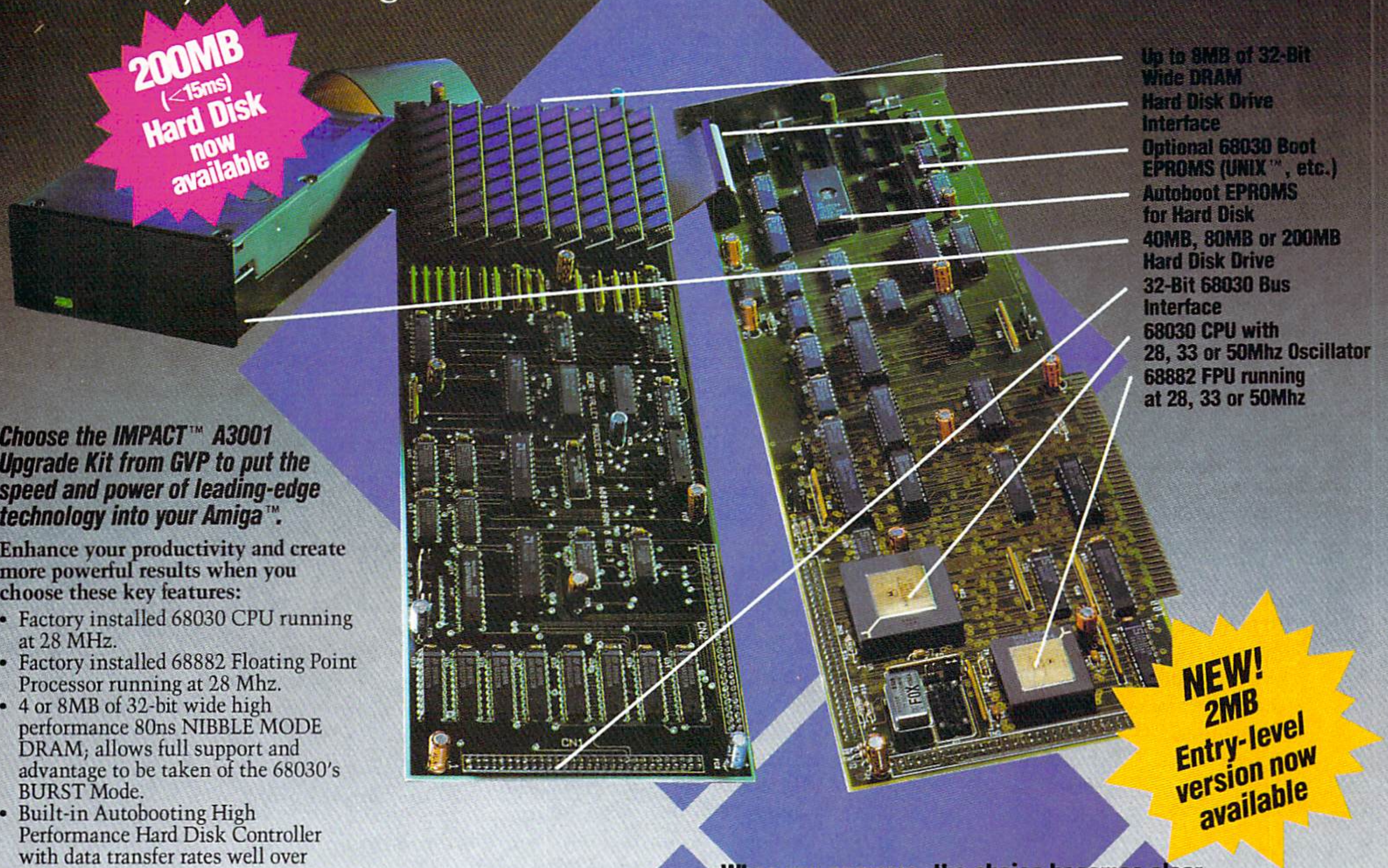
These issues are also involved in our buying 500s and 2000s. We need total backward compatibility for some of our projects. By the way, they are also cheaper.

AmigaWorld is investing heavily in the Amiga market, both current and future generations. We are buying equipment, adding editorial positions, launching new products such as the Tech Journal, and beating the Amiga drum for whoever will listen. ■

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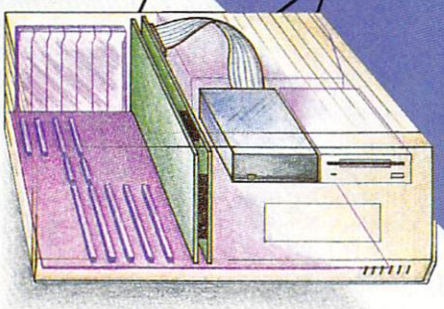
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Hard Disk Controller on 68030 Processor Board.	Y	N	Y
Number of *Open* Amiga expansion slots with hard disk drive and 8MB *Fast* memory installed.	5	3	4
Allows user to start with low-cost A2000 Amiga system and grow all the way to 50Mhz 68030 performance without sacrificing anything.	Y	N	N
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REPARTEE

Comments, complaints, and concerns

from AmigaWorld *readers.*

Underdone Toast

Concerning the Video Toaster article (Oct. '90, p. 20), I approached it with interest after seeing NewTek's Toaster in action at the recent Los Angeles Video Show. However, Lou Wallace's article left me in the dark as to the Toaster's capabilities with other equipment. It would be very helpful in future articles to at least show a block diagram, with the precise machines and associated equipment used. I'm sure that I'm not the only one who needs more complete information.

Pierce Grant
Burbank, CA

To Each His Own

I have just received my December *AmigaWorld* and am sorely disappointed by the article "MIDI Sequencers," penned by Steve Quinzi. I must say that I take exception to Mr. Quinzi's article on several points. The statement "Bars & Pipes. . . .is my first choice for 'fun' projects" may imply to some that Bars & Pipes may not be suitable for serious projects. For me, the choice of a sequencer is as personal as buying a musical instrument; does it fit your musical ideas, your style of writing, as the instrument fits your hand? Does it get in the way of creativity? Mr. Quinzi's implications could well steer someone away from discovering that Bars & Pipes is an extremely serious sequencer for those of us who have delved deeper.

I invite Mr. Quinzi to hear my music and that of my crosstown colleague, Melvin Sparks, and tell us "it ain't serious." Just because a sequencer accomplishes its objective in a "dramatically different way" does not impair its efficiency. Also, "non-destructive editing" is a very important feature that needs more thorough explanation. Mr. Quinzi further stated that Bars & Pipes "would be my last choice. . .if I were under a deadline, because. . .its open-ended design results in a kind of fragmentation that I find distracting." What the devil is that supposed to mean? Perhaps his article deadline was the distraction.

Michael Torres
Mt. Vernon, NY 10553

Hard Disc Wish List

When will game makers realize the error of their ways? I am referring to the fact that most games are floppy disk-based only. This was the sole reason that I did not buy the game Dragon's Lair. (Dragon's Lair would load to hard disk, but only one brand.) I was very pleased to find that the new Dragon's Lair would load to hard disk.

I have quite a few games, with some of the greatest graphics and sound effects, but I do not play them much because of the extremely slow disk-access speed. In the future, I will no longer even consider any software product sold for the Amiga unless it can be loaded to a hard disk.

Hubert Samm
Belleville, IL

Victories

I am very encouraged by the recent trend I have noticed toward extensive coverage of the Amiga in professional trade magazines that serve the video-production and broadcast communities. Some magazines have even gone so far as to include a regular column that features the Amiga and expounds the virtues of using the system (e.g., *AV Video* magazine's column, "Amiga Niches").

This trend has been quite evident since the release of Commodore's AmigaVison authoring system for multimedia presentations, and is also reflected in a growing number of higher-end hardware and software packages specifically designed to meet the demands of discriminating video professionals.

Could it be that skeptics within the industry are finally waking up and smelling the coffee? Will the Amiga finally get the kind of recognition it truly deserves? From my observations, the answer seems to be a resounding YES!

In my spare time, I am an independent producer for a local cable television station. When the station manager and a director were discussing the possibility of adding some computers for animations and overlay graphics, I heard the manager make the typical Macintosh suggestion. Then, to my vast surprise, the station director actually responded with: "What about an Amiga? I hear it's quite a capable system."

To make a long story short, after I put a demo tape of my work together and gave it to the station manager along with my copy of the *AW* Animation video, the director stopped me in the hall one day and said, "We're ordering Amigas."

Brad E. Hobberstad
Hawthorn, CA

Serious Use

Mike Czykun (Repartee, Oct. '90) stated that "It was we, the game enthusiasts who put the Amiga on the map." Get real! The Amiga was "put on the map" by people who saw its potential as a leading graphics and sound workstation.

You can play PacMan all you want on your Amiga, but I'll stay with DPaintIII and Pro Page, thank you very much.

Shawn Silva
Victoria, British Columbia

Send your letters to: Repartee, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458. Letters may be edited for space and clarity. ■

Headliners

NEWS FROM THE AMIGA COMMUNITY

Commodore International Ltd. reports that sales were up 21% in the first quarter of fiscal '91—mainly because of strong Amiga sales and favorable exchange rates.

Import/Export Discussed at Amiga '90

COLOGNE, GERMANY—The German market, with some 600,000–800,000 installed Amigas, offers perhaps the largest concentration of Amigas in the world—and perhaps the greatest enthusiasm for the machine. In any case, over 67,000 users gathered at the Amiga '90 show in November.

In contrast to US trade shows, where well-mannered users politely ask questions and sit patiently through demos, hordes of "crackers" roamed the Amiga '90 halls, wreaking havoc with exhibitors' hard drives and sometimes converging for impromptu rallies. They quickly covered the walls surrounding the Commodore booth with spray paint, ink, and stickers. While some looked upon these actions with dismay, others saw this fervor as a positive.

On the more serious side, many US and German companies seemed to be making deals to bring slick new products to the States. In fact, there was a tremendous turnout at the party *AmigaWorld* hosted for those seeking to enter the US market.

Among the show's highlights was **Scala** (from The Digital Vision Software Design of Norway), a well-designed package for producing interactive, self running, and mouse-triggered presentations. Scala can load animations and produce hard copy, or it can output to a variety of monitors or TV sets. The firm has US distribution in place, and an NTSC version should be out shortly.

Another key product was **Real 3D** from Activa Software in Finland. The firm claims it to be the fastest ray tracer available and is seeking US distribution.

Frame buffers were all the rage. Looking to make a go at video, American-based GVP showed off its new, high-end, **24-bit frame buffer** with digitizing and genlocking features. Amiga Centre Scotland unveiled its **32-bit frame buffer**, while X-Pert Computer Services of Germany showed off a 24-bit **transputer-based display adapter**. Recognizing that compatibility is a problem with these devices, Amiga Centre headed up the formation of a group to create related standards.

—DB

Amiga Dons Unix and Multimedia At Fall Comdex

LAS VEGAS, NEVADA—Despite much talk of a recession in the computer industry, the Fall '90 Comdex show (held November 12–16) was heavily attended by manufacturers and dealers alike. Among the hordes of vendors present was none other than Commodore Business Machines. With an impressive-looking booth full of A3000s, and with several third-party companies demonstrating professional Amiga applications, show attendees got to see the "serious" side of Commodore computers.

The star of CBM's booth was the **A3000UX**, CBM's low-cost, 10 MB, A3000 Unix workstation. Running a full implementation of Unix System V Release 4, along with X-Windows and Open Look operating in the 1024 × 800, 256-color mode of the University of Lowell graphics adapter, it was a system capable of impressing the most skeptical industry observers. Real-time video (supplied by a digitizer) running in one window of the display astonished many.

In another part of the booth, other Commodore representatives created **AmigaVision** applications on AmigaDOS 2.0-equipped A3000s.

Among the Amiga developers showing in Commodore's booth was Digital Creations, which demonstrated **DCTV**, a low-cost, 24-bit digitizer slated to ship with a 16-million-color paint program. For the higher-end crowd, RGB Computer & Video showed off **AmiLink 2.0**, a complete video-editing system that can support up to 32 video devices and control NewTek's Video Toaster via software.

In its own booth, Gold Disk demonstrated **ShowMaker**, a presentation program that seems to get better every time it is shown (we now hear of a January release estimate for the package). In another location, Supra prominently displayed its line of Amiga products. Precision Software was also on its own, showing off Superbase 4 for the PC and telling of an Amiga-version release this year.

Finally, NewTek impressed visitors with its **Video Toaster**. Among those paying careful attention to crowds at the NewTek booth was Truevision. Interestingly, one of the newer Truevision employees is a recent hire from Commodore, where he had been an Amiga product manager.

—LRW

Where the Media Is

Hoping to fulfill the promise of multimedia for the PC, Intel recently unveiled the Intel i750. Based upon Digital Video Interactive (DVI) technology, the i750 provides data compression of 160:1, allowing a CD-ROM disc to hold an hour of video. This technology is expected to be available this year in devices costing under $1000.

Amiga third-party developers have not been sitting still, however. IVS, ICD, and GVP have demonstrated an ability to run full-motion video from hard drives. Given the drop in hard-disk prices, this certainly provides a superior solution for off-line editing.

Meanwhile, Tandy and Microsoft have teamed up to offer a "Multimedia PC"—an IBM-compatible with a CD-ROM drive. The system will run Microsoft Windows with extensions for sound, graphics, and animation. I saw a sneak preview and was unimpressed with its limited animation abilities and lack of video support. Microsoft, however, is working with developers and expects a range of applications this year. All the more reason to prime the CDTV pump, we'd say.

—DB

Moving Pictures to Italy

RICCIONE, ITALY—The fourth annual Bit.Movie show of computer graphics will be held April 25—28 in Riccione, Italy, and will again feature a real-time-animation competition. Last year's show attracted over 2500 guests, each of whom was given a ballot to vote for three animations from among the 30 finalists.

Entrants can submit up to four works, and a commission will decide on the finalists, giving preference to works that do not include public-domain objects or backgrounds. The deadline for entry is March 15. Two sets of prizes (each consisting of 1,500,000, 1,000,000, and 500,000 lire for first, second, and third place, respectively) will be awarded, as both the show attendees and a panel of judges will select three winners.

For more information contact the Adriatic Coast Amiga Users Club, c/o Carlo Mainardi, Via Bologna n.13, 47036 Riccione, Italy; Telefax 0541/601962

—BG ■

Headliners is compiled by Barbara Gefvert. Send your news bits to Headliners, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458.



OBITUS

You're in the depths of your own worst nightmare . . . but this time there's no waking up.

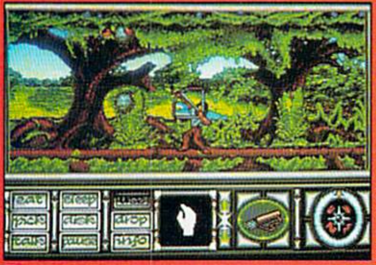
Lost and alone in a dangerous and alien world you must discover where you are, how you got there . . . and how you're going to get out!

In a frantic search of the unfamiliar land you explore aMAZEing forests, mines and underground complexes collecting objects and interacting with indigenous creatures.

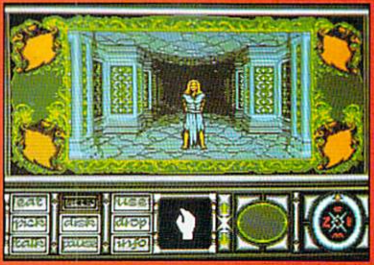
Re-emerging into daylight you race along perfect parallax action scenes, dispatching enemies as you battle ever deeper into the unknown.

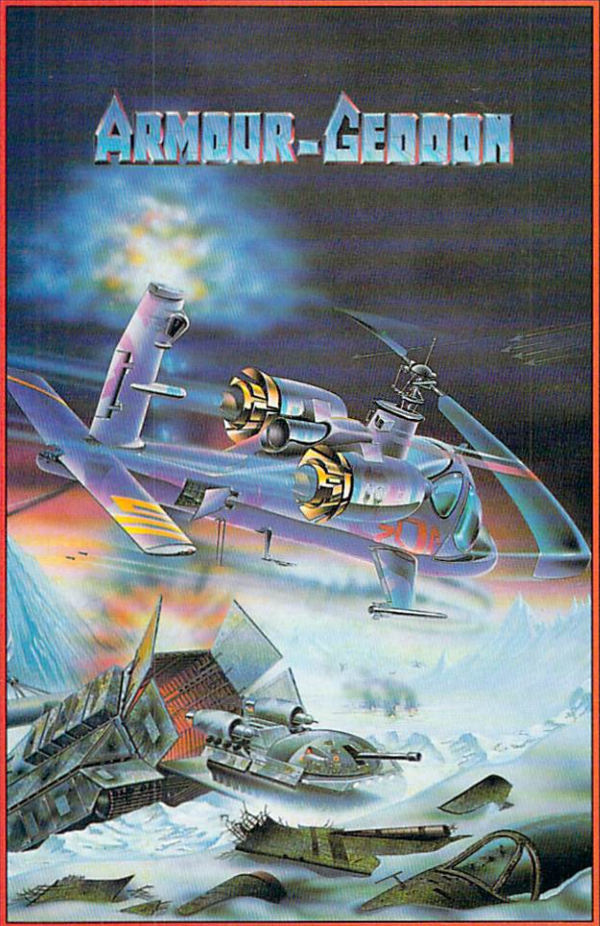
Impelling RPG with more than a dash of hack-'n'- slash.

Screen shots from the Amiga version.









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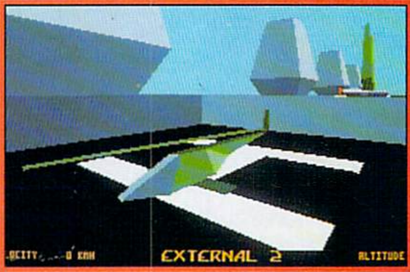
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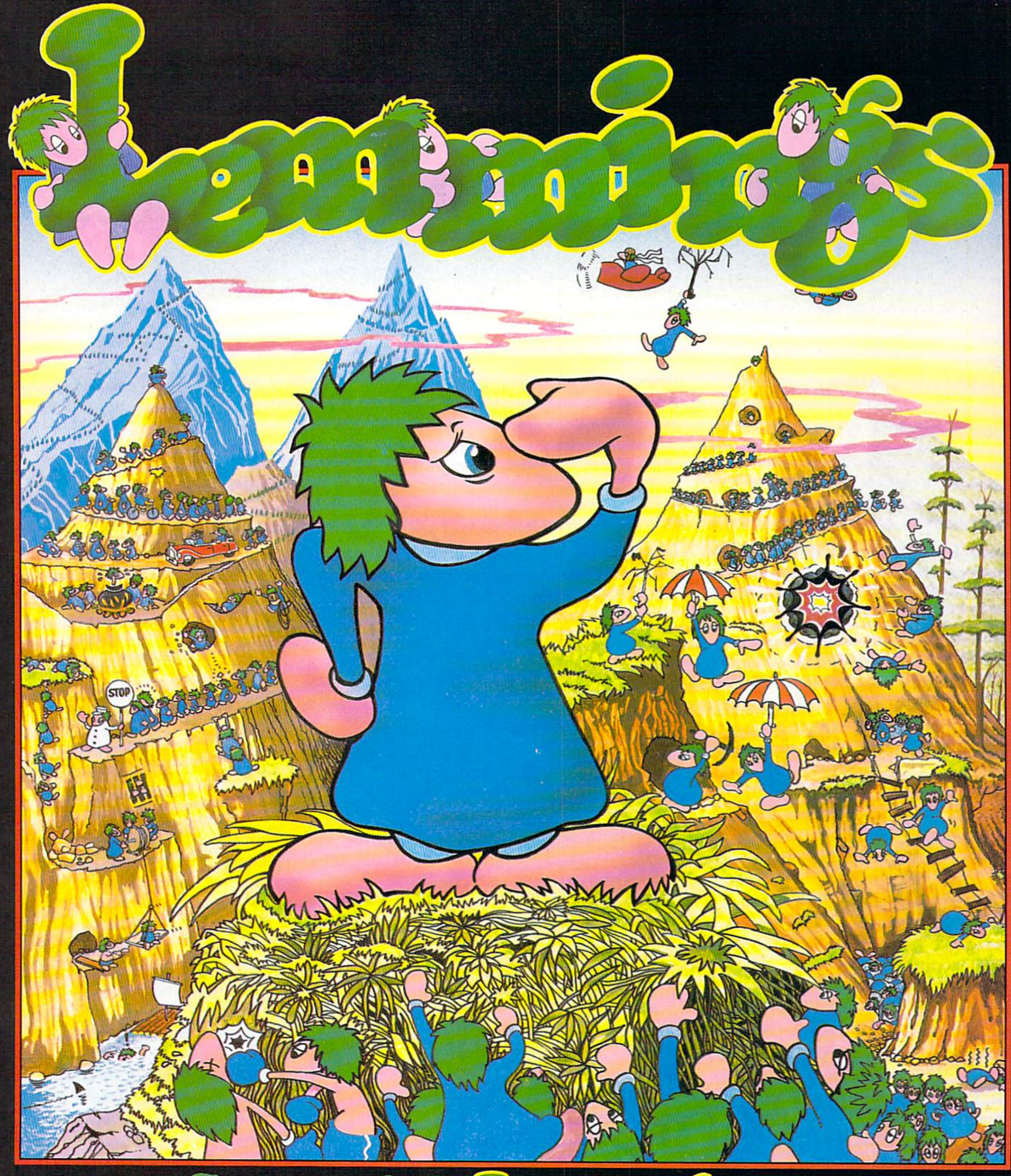






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REVIEWS

SuperGen 2000s

Changing the face of Amiga video.

By Joel Tessler

DIGITAL CREATIONS' SUPERGEN 2000s Amiga genlock represents a complete redesign of computer video genlocks as we know them. This design change may well alter the way manufacturers think about computer video hardware in the future.

Most computer genlocks are boxes that connect to the computer externally via the RGB port, a design approach that precludes complete integration of computers and video equipment into one system. This has had the effect of limiting most Amiga video software to little more than a collection of overlay routines with provisions for external video-in.

With its 2000s genlock, however, Digital Creations has demonstrated that it recognizes the Amiga as the video computer engine it truly is.

The Hard Side

Digital Creations supplies the SuperGen 2000s hardware in three separate parts: the main video board, a video breakout box, and a dissolve-controller console.

The main video board plugs directly into the video slot of A2000-series machines and thus becomes an integral part of the system. It requires no extra RGB cables, no AC cords, and no hassle. (The 2000s does not work with the A1000, the A500, or the A3000, although Digital Creations plans to adapt it for all these models.) The back of the video board has a DB-9 connector for the dissolve controller cable and a DB-25 connector for the video breakout box. This configuration leaves the Amiga's RGB port free for use with any Commodore Amiga or compatible RGB monitor.

The compact video breakout box plugs directly into the 25-pin connector on the main video board. After tightening a few screws, the box is installed securely on the rear of the Amiga. At first glance, the box looks like a maze of confusion. A closer look reveals a no-nonsense design that allows for transcoding various video formats in and out of the Amiga. The top row of switches on the top of the box are for Preview Select, Input Mode Select, NTSC Termination Select, and Y/C Termination Select.

Below these switches are eight male BNC connectors—one each labeled Preview Chroma Output, Preview NTSC/Luma (Y) Output, Fast Key Input, Key Output, NTSC Input, and NTSC Thru, and two labeled NTSC Overlay Output. There are also four S connectors: one Y/C In, two Y/C Out Overlayed, and one Y/C Thru. By using the selector switches in combination with any of these connectors, you can customize a configuration for any application, regardless of its complexity.



YOUR TURN!

I am on my second Digital Creations genlock—the 2000s. I am quite happy with it and have gotten some very nice compliments on my work because of it!

Walker L. Ayres
Sacramento, CA

The external dissolve controller allows for overlaying video with Amiga graphics in a variety of ways via two sliders. In addition, a dual-position rocker switch on top of the box lets you choose between SVHS and Composite video modes.

The Soft Side

Software installation is automatic, consisting mainly of clicking on an icon and answering a few yes-and-no queries. Only for customized configurations are there additional requirements.

Double-clicking on the SGSetup icon opens a control panel loaded with real-time video-processing buttons and gadgets—controls that, until now, were available only in hardware. Located on top of the window are the four main buttons: Dissolves, VPos/Saturation, Chroma Phase, and Horizontal Pos. Just below these are two horizontal knobs for adjusting various parameters and attributes. Most of the remaining video-processing gadgets are used in conjunction with the main buttons. These include Dissolve Enable, Auto Dissolve, Notch Filter, Internal Blanking, Auto Gain Chroma, Internal Key, Fastsync Clamp, Vertical Interval, Timing Enable, Alpha Key, Setup Adder, and RGB Termination.

The pull-down menus allow for loading, saving, setting, and updating various configurations. Digital Creations has also included some neat programs, among them utilities for setting up hot keys and controlling dissolves remotely with a joystick! The SGColorBars utility is actually an IFF graphic run from an icon that outputs 75% SMPTE color bars.

Exercising Your Options

The SGSetup Parameter menu provides scores of options. Among these are the Auto Gain Chroma feature, which can help to correct input video that has varying or incorrect amplitude levels. In addition, you can increase chroma saturation by clicking on the VPos/Satu-

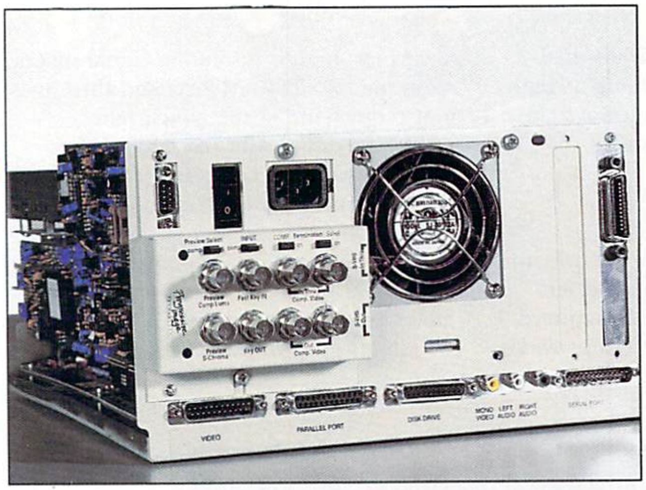
ration gadget in this mode. By selecting the slider knobs and moving the mouse to the right, you can actually add color to incoming video. Auto Gain Chroma also corrects colorburst to RS-170A level (40 IRE).

The Chroma Phase button works with the Timing Enable option, allowing you to adjust the phase (tint) on incoming video or even to phase to an entire A/B roll-edit suite. If you have some video clips of the Boston Red Sox that, when played back, look more like clips of the Boston Green Sox, you can get the original colors back simply by selecting the Chroma Phase and Timing Enable buttons and tweeking the slider knobs (course and fine).

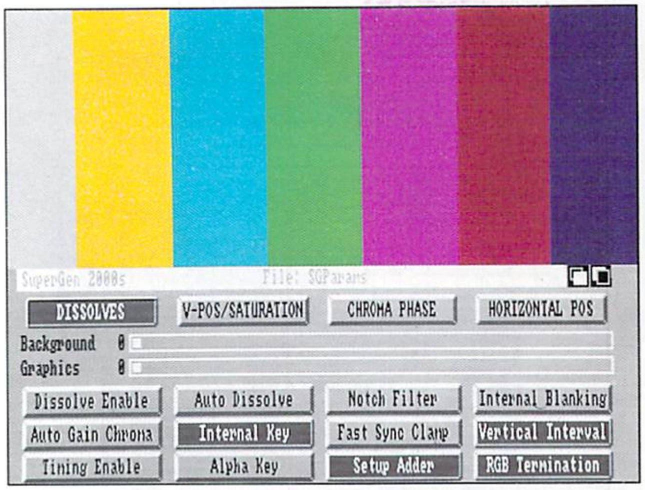
The Internal Blanking button toggles between External Video In and Amiga Video so that processing can be done on each individually. It's important to understand that the timing characteristics of the video you feed into the 2000s directly affect video output. If you want to use the 2000s's internal sync generator to improve the input video, simply choose Amiga Video. Because of this built-in sync generator, the 2000s does not require an external video for outputing Amiga graphics.

Both the Horizontal and Vertical Position buttons work in conjunction with the Timing Enable button to reposition incoming live or taped video, either horizontally or vertically. You can also use them to reposition Amiga graphics by toggling the Internal Blanking button. This feature saves you the frustration of having to leave the program and blindly try to set the screen's position in Preferences. With these features, centering graphics and live video is a breeze.

The Notch Filter option can significantly reduce the effects of chroma crawl and rainbowing artifacts inherent in NTSC. Using it along with a dark drop shadow almost completely eliminates crawling and shaking font edges.



The SuperGen 2000s hardware includes the internal board and a breakout box that installs on the rear of the machine.



The 2000s software control panel, topped by 75% IRE color bars.

HIGH-END POSTING WITH THE 2000S

I was recently contracted to install a full-blown Amiga video workstation at a large video post-production house concerned primarily with Betacam and one-inch tape. This house required perfect RS-170A broadcast specs and wanted to sync the computer with two Betacam edit decks, a one-inch recorder, a video switcher, and a $34,000 digital video-effects unit. To complicate matters, these people were skeptical about the Amiga. Given all the problems associated with timing to these types of systems, I thought this would be a good opportunity to test the 2000s.

After hooking up all the appropriate cables between the switcher, TBC, and 2000s, we booted the Amiga and opened the SGSetup control panel. On the program monitor, we overlayed live video with an Amiga graphic. Although the images looked super clean, the horizontal position of the Amiga graphic and the tint (phase) of the incoming video appeared to be off. Using SGColorBars, I invoked 75% IRE color bars for the video switcher and the Amiga, at which point it became clear that both sets of bars were indeed off in both position and phase. (A waveform monitor and vectorscope confirmed this.)

In just a few minutes, we were able to time the entire system without using a screwdriver, opening a box, or twisting a knob. To solve the horizontal positioning problem, I clicked on the Timing Enable button, selected the Horizontal Pos button, and lined up the two sets of bars using the slider gadgets. Then, I clicked-on both the Chroma Phase and Timing Enable buttons and adjusted the phase to perfection, again using the slider knobs. While tweeking the phase, I could see the colors line up in the boxes on the vectorscope until they were dead on.

At the end of the session, it was obvious that my client was no longer skep- ►

tical about the Amiga. The 2000s had done an admirable job of timing a complicated NTSC composite video system and encoding super-clean Amiga graphics.

The S Side

Using the 2000s with SVHS, the defacto Pro-Sumer videotape format, is essentially the same as using it with standard composite tape, although SVHS provides a cleaner, higher resolution signal that is immune to NTSC artifacts and thus does not require use of the Notch Filter.

SVHS editing with the 2000s is less complicated than composite editing, mainly because of the design of the SVHS-connector section of the breakout box. In fact, you can hook up an entire suite in just a few minutes. One feature that really comes in handy is the extra SVHS output, which can plug directly into an SVHS video monitor. In combination with the VCRs, I was able to use four SVHS monitors, all with proper termination.

During the edit session, I was easily able to overlay Amiga titles and graphics using the dissolve controller. Afterward, some dubs were made. The Amiga graphics had excellent color, the live-action video looked clean, and the overall signal remained quiet. The only problem we encountered was not being able to see the connector network after pushing the A2500 back into place against the wall. By placing a small mirror behind the Amiga, however, we solved this problem.

The Down Side

Although the 2000s documentation is accurate and solid, it would benefit from more examples of how to use all the bells and whistles; the very advanced features especially need more comprehensive coverage. In addition, graphic demos would give first-time users a better understanding of what genlocking with a 2000s is all about.

On the hardware side, I would like to see the 2000s accommodate Y-688 dubbing and also fully support Beta component format and automatic termination. (Rumors are circulating that Digital Creations is already working on the first two.) Finally, incorporation of GPI triggering would make editing more convenient.

Digital Creations has given us a glimpse of a future in which engineers no longer struggle behind racks with tiny screwdrivers and flashlights. Thanks

Continued on p. 20.



YOUR TURN!

The SuperGen 2000s gives you basically the same clarity as regular RGB and delivers much truer color than other genlocks I've seen. I like the ability to control fades from remote as well as from software. I only wish it would work with the Toaster. . .but of course that's impossible because the Toaster supplies its own genlock.

Greg Bahlhorn
Carmichael, CA

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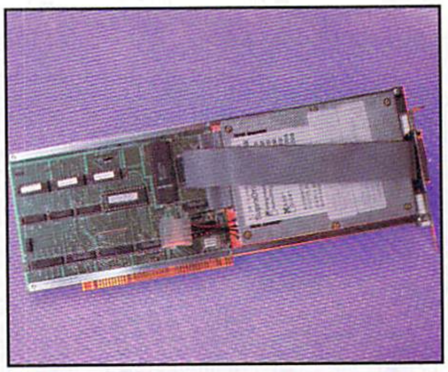
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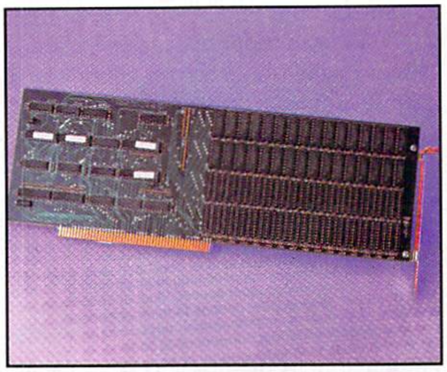
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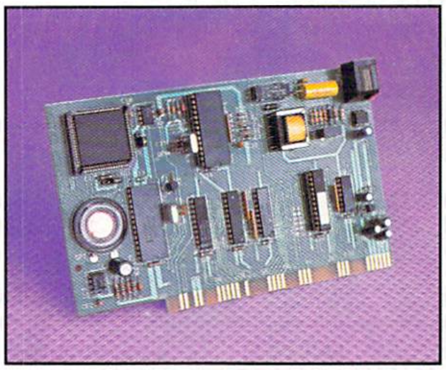
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From p. 16.
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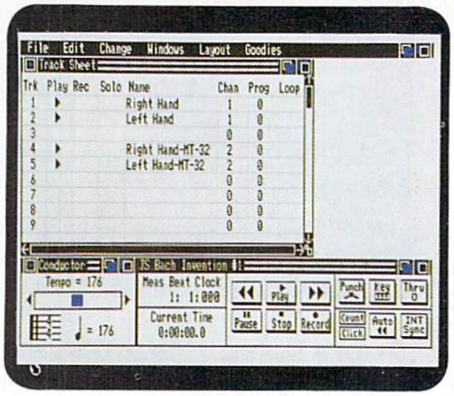
By Michael Hanish

IT HAPPENS IN the world of software as well as in the world of people and pigeons: Parents produce offspring that resemble them. Recently it happened in the Amiga music software community; Master Tracks Pro gave birth to Trax, and to Music-X was born Music-X Jr. Both "kids" are healthy, solid, and bug-free. Sadly, however, they have no personalities of their own; they are only watered-down reflections of their parents.

Because sequencer preferences are largely a matter of personal style, we'll profile both programs, looking at how well they accomplish similar tasks, including their common goal of welcoming newcomers to the world of MIDI sequencing. [For a look at the parent programs, check the reviews of Master Tracks Pro 3.0 (p. 62, Jan. '90) and Music-X (p. 18, Nov. '89).]

THE CUTEST LITTLE BABY TRAX

Trax opens onto a four-color screen containing multiple windows for the sequencer controls, track names and assignments, tempo, and track and song editing. All are clear, readable and easy to understand. The sequencer's controls emulate those of a tape recorder, and include an auto-rewind button that speedily returns you to the last place the sequencer started from. A nice addition



Trax's Track Sheet window, Conductor window, and transport controls.

to the usual counter (which reads the current song location in measures, beats and clocks) is an elapsed-time counter. Next to the transport controls is the Conductor window, with a slider for setting tempo, beat and meter. The Conductor track can handle both abrupt and gradual changes in tempo, as well as multiple meters.

The center of the work screen is usually occupied by the Track Sheet window, wherein you can keep an eye on the 64 tracks to which the program can record. The display is clear, uncluttered, and easily readable. Trax does not support the Amiga's internal sounds, so the window's options are limited to control of MIDI channels, program-change messages (to tell the synthesizer which voice to play), looping (you can make each track loop independently), and a play/record/mute selection for each track. Recording a track is a simple process: Select a track, click in the Record Enable box in the Track Sheet window, and click on the Record button in the Transport window. The MIDI data is automatically sent back out on the channel through which it came in.

ONE AT A TIME

Track editing and step entry are done in the Step window. One window is used for editing all tracks; its contents are determined by which track is at the top of the list on the Track Sheet. Unfortunately, this setup prevents you from working on several tracks simultaneously. Note events are displayed on a grid of pitch (which is represented by the piano keyboard) and time. All editing is done graphically: Select a duration, point to a time/pitch location, and click to paste the note down. You can zoom in for more precision. Although the display is clear, it is limited to note events only.

To the detriment of Trax, editing is apparently one of the main features the designers cut back on. Editing even such a simple thing as the duration of one note is a clumsy, multistep process, involving mouse clicks, menus, and requesters. Dealing with velocity or dynamics is even worse, as those values are not even displayed. Global changes are easier to accomplish: A section of notes is highlighted and changes are made by answering to a requester. Cut, copy, paste and mix features are available from the Edit menu; alterations to velocity, duration, pitch, and quantization are allowed through the Change menu. Trax supports the Clipboard, but for only one clip at a time.

The Song Editor window provides graphic means for shaping the overall form and arrangement of a piece. Each measure of each track is represented by a small box, which appears open if the measure is empty and filled if it contains data. Editing is done in much the same way as in the Step Editor: You highlight areas to be edited and perform action by making selections from the Edit or Change menus. All features function as promised, but the tasks seem to take several more steps than they should. For example, moving a measure from one location to another involves cutting the data, deleting the measure, inserting a measure, and pasting the data down.

You can filter selected MIDI events from the incoming data stream for recording, thus conserving large amounts of memory. Similarly, you can strip certain controller data from the selected portion of any track.

Overall, I found Trax to be a breeze for recording and playback. The screen layout is clearly readable from the distance to your MIDI keyboard, although the program does not support remote control. It is file-compatible with both Master Tracks Pro and the standard MIDI file formats. The manual is clear and to the point, and should be more than sufficient to get the MIDI novice up and running.

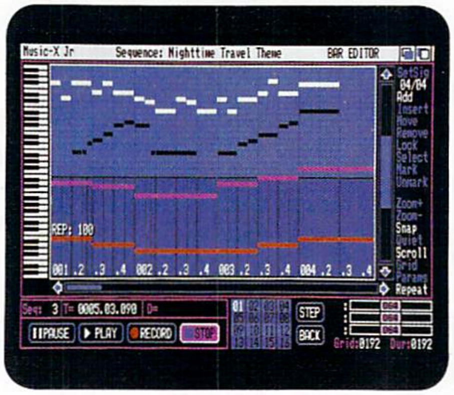
On the negative side are Trax's incomplete and clumsy editing features and ►

methods. I think beginners will find Trax's approach to editing confusing, and intermediate users will find it incomplete. Another drawback is the program's lack of support for any form of synchronization.

A Chip off the Old X

Music-X Jr. (Junior) offers a very different realization of the same basic tape-recorder metaphor. Windows are replaced by pages, or by separate screens for the major functions: Sequencer, Bar (sequence) Editor, Filters, Keymap Editor and Samples. Junior opens onto the Sequencer page, which is loaded with information. Transport controls, counter, locater buttons, and tempo information are housed in the upper-left quadrant of the screen. The lower half of the screen shows sequence information, including length, channel, name, and output assignment. In the upper-right corner is the track display (conceptually similar to Trax's Song window), showing which sequences are playing at any given time.

While many other sequencers use the terms "sequence" and "track" interchangeably, Junior makes a clear distinction. A sequence may be of any length greater than one measure, contain data for one or many instruments, and even contain events that trigger other sequences. A track, on the other hand, is used to sequence sequences, or, to quote Junior's comprehensive manual, "A track is something that plays a sequence." Once you get the hang of it, this dual-level approach makes for great flexibility in composing and arranging.



You can edit all the track data displayed in Music-X's Bar editor.

Clicking on a sequence highlights it for editing, and selecting a button below the transport controls sends you to the Bar Editor page. Viewing this page for the first time is a bit like looking into a fireworks display. Most of the page is filled with a busy, editable graphic display of track data. Pitch, on the vertical scale, is represented by a piano keyboard; time is on the horizontal. Each individual note appears as a rectangle, the length of which depends on the note's duration. The bottom half of the display shows any or all of the parameters of the note event, such as attack and release velocity, control changes, pitch bend, and program change. Information relating to the dynamics of a note, such as velocity, is shown in columns, whose height represents its intensity.

The Display menu is used for selecting which events will be visible, so you can start by displaying only pitches, for example, to avoid visual overload. You can add or insert events using the mouse and gadgets. The procedures are consistent among all the parameters; once you

are familiar with the way it works, editing becomes a pretty smooth process. Junior supports both step-time and real-time recording. You can replay the track solo from the Bar Editor page, or return to the sequencer page to hear it in context.

The Filters page can block certain types of incoming events from being recorded, change one type of event to another, or echo the events to the internal voices or to any channel(s) at MIDI Out. It works in conjunction with the Keymap editor, translating one type of event into another.

Where Is That Sound Coming From?

Junior supports the use of Amiga samples and MIDI instruments for playback, both of which you "manage" on the Samples page. Management consists of assigning each voice to one of 16 channels, which are not to be confused with MIDI channels. You can then assign each voice to a particular sequence from the Sequencer page.

Samples in IFF and Sonix format can be loaded, used and even edited to a limited extent. A small graphic display at the bottom of the page provides access to 16 movable points on the sample's envelope, as well as a slider to tune the sample. This feature makes Junior's power available to those without MIDI, but at a price: Samples can consume huge amounts of memory and only four can play at a time. When Junior saves a performance file (all the data, parameters and variables associated with the piece), it also saves the samples, making for a very large file and potential problems for those without high-capacity systems.

Junior can save and load files for each of the pages. It can also load and save performance files in the format it shares with Music-X as well as SMUS-format and standard MIDI files. Files of the latter type require the use of external converter programs, supplied on the Music-X disks. They work reasonably well.

Timing can be either internal or external, with support for MIDI Song Position Pointers, but not SMPTE Time Code. That is one of the few features reserved for the original Music-X. The lengthy manual, complete with glossary and index, does a respectable job of explaining synchronization, timing, and all other program features.

Once I was able to wade through the sometimes confusing and busy graphics display and get familiar with the abbreviations used to label buttons and sliders, working with Junior was reasonably smooth. It became difficult, however, when I had to flip between the Sequencer and Bar Editor pages, as I often lost my place in the sequence. I certainly appreciated the editing features, which are more complete than those in Trax.

On the Right Track?

Both Trax and Junior perform all the basic functions, but I find Trax lacking in too many editing areas. Neither program is copy-protected, and both run politely on a one-megabyte system. If your interest in MIDI music-making grows deeper, you'll be interested to know that the developers of both programs offer upgrade paths: If you purchase the "child" program, you can upgrade to the parent for a fee. ►

Before you make any decisions on which to choose, go to a friend or a dealer who has the parent program and work with it for a while. See if it meets your present and future needs and if you find the work environment comfortable and understandable. My suggestion is to save up for one of the full-featured parent programs rather than buying one of the offspring. Even novices will quickly reach the limits of Trax and Music-X Jr.

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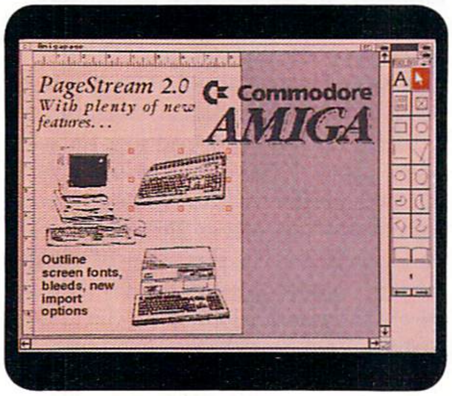
By Loren Lovhaug (with Frank Hudson)

THE SOVIETS KNOW it; the Czechs know it; and Amiga desktop publishers know it: Competition breeds excellence. While better ideas finally prevailed in Eastern Europe and the Cold War melted away, the rivalry among Gold Disk (Pro Page), Saxon (Publisher), and Soft-Logik (PageStream) is beginning to heat up as each company feverishly upgrades its product. Successful results could raise Amiga desktop publishing to new heights—even approaching the state-of-the-art as defined on the Macintosh.

With PageStream 2.0's power and flexibility, Soft-Logik has leap-frogged its Amiga competition and is poised to compete with the best—on any platform. The upgrade includes all of the obligatory text and graphics manipulation tools necessary to meet this multiplatform challenge, with emphasis on features designed to reduce time-intensive tasks.

PLAYING TAG

While both PageStream and Pro Page support master pages (document elements you use to create left- and right-hand pages) and templates (reusable structures for pages or series of pages that cannot be overwritten), PageStream



Opening view of PageStream 2.0

alone provides the equally powerful tag and style-sheet functions.

A tag is a set of formatting styles that controls not only font size, style, and attributes, but also spacing, indentation, justification, border styles, and text-box fill. While the concept may sound complicated, implementing it is not. You can construct tags via an intuitive requester simply by clicking on the options you want. From then on, your saved choices will appear in a tag menu.

For example, if you define a tag for subheads as "Times roman boldface centered," you can set the same subhead attributes for another piece of text by selecting this tag from the menu. If you change your mind and wish to make your subheads Palatino flush left, then altering the tag changes all the tagged subheads in the document. As you go through a document therefore, you can assemble entire style sheets by combining the various tags you have defined along the way.

PageStream's global search-and-replace function lets you alter font types and attributes, line spacing, indentation, and justification—*en masse*. The program's requesters allow you to access these features without memorizing arcane formatting codes.

Another PageStream highlight is the program's flexible tools for manipulating graphics and text. With them, you can rotate (three-dimensionally in increments of 1/100 of a degree), group, ungroup, and align bitmapped graphics, structured-drawing objects, and blocks of text in any imaginable combination. Once these elements look just right, you can lock objects in their locations so you won't accidentally move them.

As with most full-featured page-layout packages, 2.0 offers tools for drawing rules and boxes on the screen page. The program's structured-drawing tools are so complete that they could be legitimately considered as an object-oriented drawing program. The program includes standard line, box, and circle tools, as well as the more exotic Bezier-curve and closed-polygon tools. The capability to specify the beginning and ending angles of arcs to 1/100 of a degree is particularly impressive.

PageStream is capable of using graphics created in other programs, as it can recognize a number of different graphics-file formats—even some from other platforms. As shipped, PageStream 2.0 supports any kind of IFF bitmapped graphics, as well as several nonstandard bitmapped-graphics formats created in programs running on Macintosh, Atari, and MS-DOS machines. In the future, as new formats are developed, Soft-Logik plans to add modular import filters, or "drivers," that will enable PageStream to recognize the new formats and to use graphics created in programs that support them.

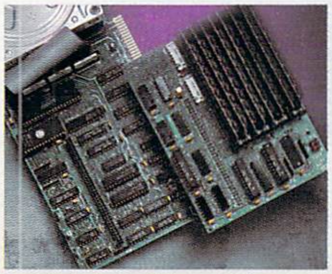
In addition, the program supports structured graphics via both the Aegis Draw format and the popular cross-system standard EPS (Encapsulated PostScript). (You must, of course, have a PostScript printer in order to use EPS graphics.)

While PageStream supports excellence!, ProWrite, and WordPerfect text formats, it strangely offers no import options for Pen Pal (Softwood Files) and Scribble! (Micro-Systems Software). The only nonAmiga word-processing formats the program supports are Atari-ST-compatible. I strongly urge Soft-Logik to add import filters for such nonAmiga programs as WordPerfect 5.1, Microsoft Word, and MacWrite, for it is quite common for Amiga desktop publishers to re-

Continued on p. 92.

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MULTIDIMENSIONAL

Multimedia

Whatever your presentation, from a simple product display to a full-scale video production with music, animation, and interactive user input, we'll show you the equipment and programs you need.

By Jamie Krutz

FULL-BLOWN MULTIMEDIA presentations often start small, but like Topsy, sometimes they just keep growing:

John comes in with a picture of the company's prototype of a new product. "Can you use that new Amiga of yours to show me what this would look like in red," he asks. "Or maybe green."

"No problem," you say, ready to test your hard drive and three megabytes of memory with some real work. But where do you start?

The easiest way to get the picture into your computer is to use a video camera and digitizer. For digitizing speed, I recommend **Framegrabber** ($799.95, Progressive Peripherals & Software), which works from a color video camera and handles overscan in all but hi-res mode. Or you can employ **Digi-View** ($199.95, NewTek), which uses a more time-consuming process with a black-and-white video camera and three color filters to create your image. Digi-View, however, can create overscan images in all resolutions, as well as create 21-bit files (for over two million colors).

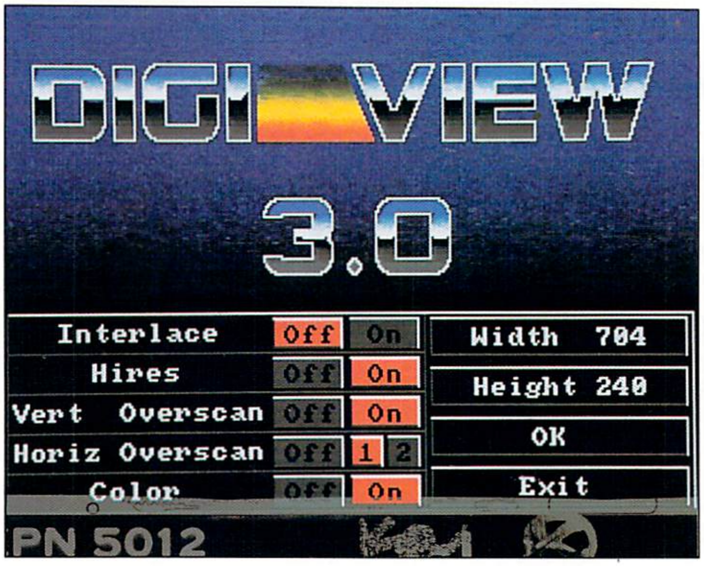
To its credit, Framegrabber can capture stills of moving images (digitize in real time), whereas Digi-View can handle only stationary objects and images. While this makes no difference for the project at hand, real-time digitizing could come in handy for more elaborate productions in which you need to grab an image from taped or live video.

After you digitize your picture, load the result into a paint program that supports HAM (Hold and Modify mode), such as **Photon Paint 2.0** ($149.95, ►

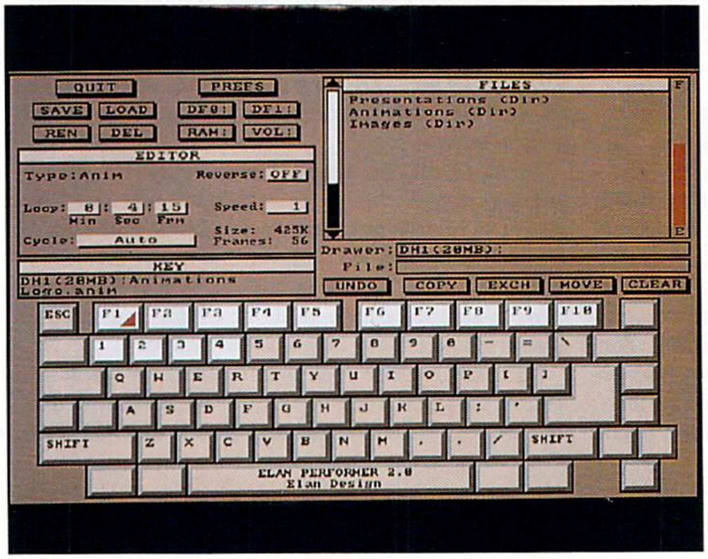
MicroIllusions), **Deluxe PhotoLab** ($149.94, Electronic Arts), or **Digi-Paint 3** ($99.95, NewTek) and change the color. If you are comfortable with the software, the entire project should take only an hour or two. (Consult "Digital Reprise," p. 39, Oct. '88, for some valuable digitizing tips.)

John loves the colorized products, and raises his expectations. "I'd like to show these color choices in my presentation to the marketing department," John says. "Can you put the pictures together into a slide show?"

With the bulk of your work (making the screens) done, this step is a breeze. The simplest program for



Here, in DigiView's set-up screen, you can determine the type of image you are going to create.



You can easily assemble a snappy presentation by using Elan Performer version 2.0

the job is **Elan Performer 2.0** ($59, Elan Design). It lets you assign each picture to a different key on your Amiga keyboard and switch among them. If your meeting room is equipped with a video monitor or projector, John can connect the Amiga via an encoder (a device that translates the computer's RGB output into a composite-video signal) or a genlock (which translates and also syncs the computer's signal to incoming video) and show your work directly from the computer by pressing the proper keys.

If he is more comfortable with a traditional slide show, you have three options. You can send your disk of IFF files to a slide-making service and have it transfer the images to film for you. (See " 'Projecting' Your Best Image," p. 75, Dec. '89, for a list of services and advice on slide shows.) While relatively inexpensive, service charges will add up over several projects. Photographing directly from the screen is a cheaper, but more hit-and-miss process. For best results, use a slightly long lens to minimize screen curvature and bracket your shots. An easier solution is to invest in a **Polaroid Palette** film recorder ($1495) and **Imprint** software ($495, American Liquid Light) or a high-resolution film recorder and pull the screens straight from memory onto film.

PUMP UP THE PRODUCT

Never satisfied, John returns after the meeting with another challenge: "Can you bring the picture in the computer to life? I want to show the product working to convince the financial guys that it will fit the market needs, but the engineers tell me the prototype won't be ready in time."

Not only can you show the product working, you can also let John and his finance pals use it. You probably already have a digitized picture (preferably not in HAM mode) of the product's front panel from your colorizing episode. Use an authoring system, such as **CanDo** ($149.95, INOVAtronics), **AmigaVision** ($149, Commodore), or **DeluxeVideo III** ($149.95, Electronic Arts), to combine it with other elements into a simulation of the product.

With the front panel as a background screen, use your authoring system to specify which buttons you wish to trigger brush animations of displays (CanDo, DVideo), panel lights, and meters, and which to calculate numbers (CanDo, AmigaVision), display text, trigger digitized sounds, and otherwise simulate what the real product does. To create brushes and brush animations for the simulation, **DeluxePaint III** ($149.95, Electronic Arts) is indispensable. To sample appropriate sounds, (key clicks, music, sound effects) you need a sound sampler, such as **Perfect Sound** ($99.95, SunRize Industries). **AudioMaster III** ($99.95, Oxxi) is a good editor for tweeking your samples. (For a comparison of samplers, see "Sizzling Sounds," p. 48, Oct. '89.)

You don't have to be a programming genius or

sound engineer to pull this off, although programming experience will help you understand CanDo's scripting language, and a knowledge of digital recording and sound processing will help you get the best results from your sampler. (Consult "Now Hear This!" p. 20, Mar. '90, for sound-digitizing techniques.) AmigaVision's icon-and-requester method makes scripting even easier. If you prefer a time-based approach to production over scripting, DeluxeVideo will be more your speed. Expect to spend from one day to over a month on the project, depending on the product's level of complexity and your familiarity with the authoring software.

John was impressed and, more importantly, so was the finance department. Now, they want him to put together a video of the product and his presentation. John, of course, turns to you to make him look good.

Depending on his budget, you can take three routes. The low-cost approach is simply to record some of your simulation from the Amiga to a videotape. A mid-range solution is to use your Amiga to produce a more elaborate edited production. If the money's there, you can outfit an editing studio and create a top-notch video.

PENNY PINCHER

If you need only one copy, you can record directly to VHS tape, or whatever format your company uses for video playback. Because you are sending the production live from the computer to the recorder, you won't have to do any editing.

For additional equipment, all you need is a video deck, a genlock or encoder, and a microphone. Connect the genlock to the Amiga, the genlock's video output to the video input of your video deck, and the microphone into the video recorder's microphone jack. If the video deck lacks a mic input, you will need to connect the mic to an audio mixer and hook the mixer's line outputs to the recorder's audio inputs.

To give the video a polished look, use DeluxePaint to create some opening title screens, a closing screen, and a black screen to add to John's original presentation. Now, start the tape recording and call up the opening screens, along with any music you may have created and digitized. While the tape is rolling, have John work with the simulation and describe what he's doing. When he's done, call up a closing screen for five seconds or so; then bring up the black screen and let the tape run a few minutes so John's presentation is not rudely cut off by video noise. You should be able to wrap up this video in a day.

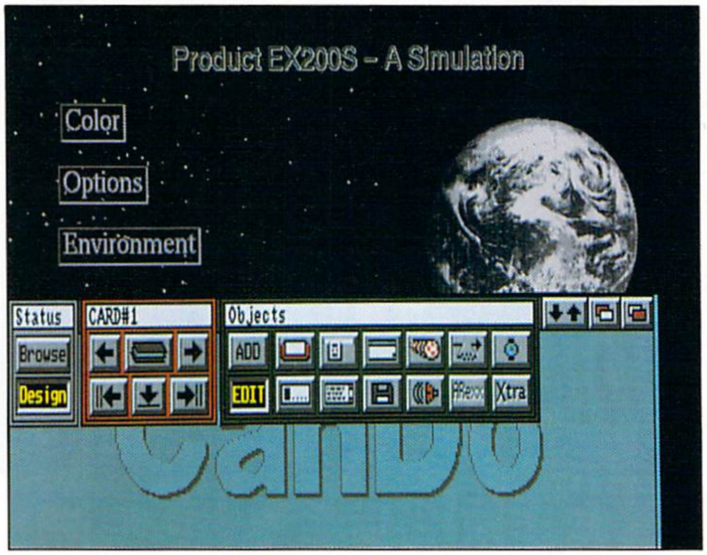
CALL FOR REINFORCEMENTS

If you would like to include shots of John at work or the product's intended application and setting, you need to do some video editing. If you don't have any video experience, I highly recommend working with a professional video-production company. A full-service company can provide writing, producing, on-camera talent, directing, shooting, lighting, music, graphics, and editing. Choose what you can do, and work with professionals to do the rest.

If you feel confident of your skills but are going to do only a few productions, you will get more bang for your buck by renting time in a professional editing suite than by purchasing less capable equipment. Look for a studio with an Amiga so you can easily incorporate graphics and titling created on your office Amiga into the final production. If you plan to do a lot of videos, however, you'd be better off investing in some cameras, editing decks, and edit controllers of your own. For industrial production, $^{3}/_{4}$ sp, Hi-8, SVHS, or $^{3}/_{4}$-inch formats are adequate. (For specific model suggestions, see "The Studio Builder's Reference Guide," p. 30, Oct. '90.) You will need to add a genlock to your current setup, as well. For best results with SVHS or Hi-8, use a genlock that separates the luminance and chrominance signals. (For a comparison of genlocks, see "Who's In Sync," p. 54, Special Issue '90.)

For this and more involved projects, you should plan your video's script, prop and personnel requirements thoroughly before setting to work shooting or creating graphics. The extra time you spend in preproduction will pay off later in dramatic ways. You can write your scripts and lay out storyboards in a graphics word processor (I use **ProWrite 3.0** from New Horizons, $175, because of its parallel column mode), track the budget in a spreadsheet, and keep tabs on your crew with a database.

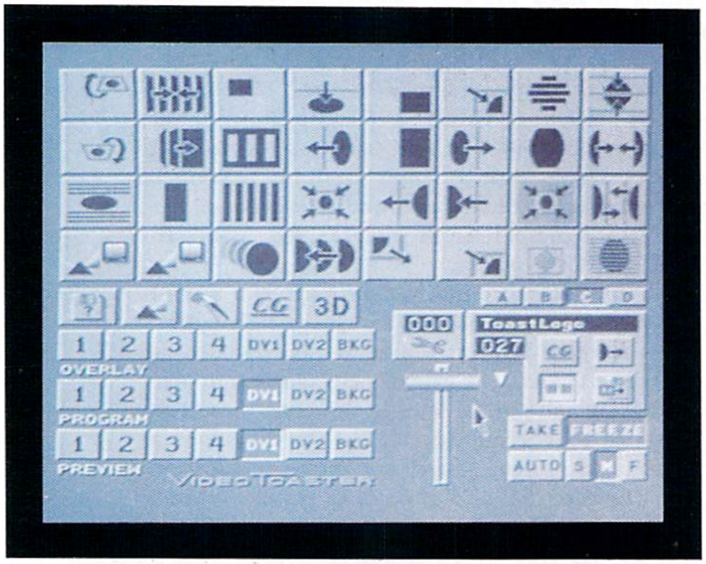
If you are using video, graphics, or music from ►



CanDo is one program you can use to create an interactive simulation of the working product.

outside sources, know what you are getting and who owns the rights. (For guidance as to copyrights, see "Copy Rights and Wrongs," p. 41.) The safest bet is to create your own or license production music from a studio. If you write music, you will find **Music-X** ($299.95, MicroIllusions) and **Bars and Pipes** ($250, Blue Ribbon Soundworks) to be unique and powerful Amiga MIDI sequencers. Bars and Pipes' real-time ARexx support and optional **Multimedia Toolkit** ($59.95), set it apart for multimedia use. Both programs will also synchronize with SMPTE time code. (See "MIDI and SMPTE Compatibility," p. 76, Jan. '91 for more information.)

For the animation and still-graphics side, you already have the basic tools, although a character-generator program would come in handy. Once again, use Performer, DeluxeVideo III, or AmigaVision to pull together all the elements.



Through the Video Toaster's main control screen, you can add special effects to your videotape.



The Amiga plays a key role in RGB Computer & Video's editing suite.

Now it's time to assemble all the pieces onto video tape in the proper order. In addition to your decks and controllers, the **Video Toaster** ($1595, NewTek) is a valuable tool. You can use it to mix among four external video sources, its two 24-bit (16-million-color) frame buffers, and the background-color generator. The external sources must be genlocked to a common source of video sync, however, and all tape machines must have time-base correctors. Unfortunately, the Toaster does not have separate luminance and chrominance processing for SVHS and Hi-8.

On the software side, the Toaster includes a moderately featured character generator with good-looking output, an impressive 3-D rendering environment with 24-bit output (but no direct support for real-time playback of animations), an adequate 24-bit paint program, real-time colorizing effects, instant 24-bit frame grabbing from video, and some spiffy digital transition effects. Take note, however, that the Toaster works only with Amiga 2000s and 2500s, and to use all of its features, I highly recommend a 68030 accelerator card, at least seven megabytes of RAM, and a large hard drive. (See "Amiga Video: Done to a 'T'," p. 21, Oct. '90, for a thorough description.) Once you have edited the video, you can make dubs from the master tape to the format your company uses for playback.

PRACTICALLY PRO

If your video needs that extra sizzle, shoot it in a higher-quality format like BetaCam or M2, and edit to one-inch or D2 tape. Sizzle costs a lot, however, so expect to spend a month or more working and several thousand dollars per finished minute. You can still use Amiga graphics and animations, and in a frame-accurate editing suite, you can take 24-bit animations rendered to a frame buffer and record them one frame at a time to videotape with MicroIllusions' **Photon Video Transport Controller** ($299.95) for smooth, high-quality results.

To save money in the edit suite (typically $100 to $500 per hour in these tape formats), thoroughly document your camera tapes' scenes and time code, and do an "off-line" edit using a less expensive format. MicroIllusions' **TCRG 102** time-code reader/generator ($799.95) lets you stripe tapes with time code and log SMTPE time-code numbers directly into your word processor or database, and it works with any genlock to create window dubs (superimpose the SMPTE numbers on your screen) for your rough cut.

You can then make the time-consuming decisions about shot placement and timing before you spend the big bucks at the studio. You can create a standard time-code list of all the shots in your program with ►

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The West Coast is thrilled and John has the go ahead to train the sales staff. "Can you whip up some kind of interactive video?" he asks. "I'd like a sales training program that emphasizes closing skills."

A little tired of John getting all the glory while you do the work, you still say, "No problem."

Although you can buy prerecorded video discs for interactive use, this situation calls for original production. After researching the sales process, you can produce video vignettes of common sales situations and shoot alternative endings that show the likely outcome of different sales techniques. Transfer your footage to a video disc (see "Mastering Multimedia," p. 66 in this issue, for details).

Using an AmigaVision-supported video-disc player such as the **Pioneer LDV-2200** ($895), create an AmigaVision user interface for your interactive training program. Show the beginning of a sales situation, let the trainee choose from a list of different closing techniques, and instruct AmigaVision to pull up the proper vignette from disc.

AmigaVision can also play animations, bring up IFF graphics with built-in transitions, trigger IFF samples, and play MIDI instruments. If you do not have the budget for the video disc, you can create vignettes using text, still images, and animations, and set up the same kinds of choices for the trainee. Once all your research and video work is done, you should be able to pull the project together in under a week.

The program is a success, and John gets a big raise. You get a well-deserved vacation, during which you can read up on sophisticated animation programs, 3-D modeling programs, and 24-bit graphics boards that will jump your presentations to an even more impressive level of complexity and quality. ■

Jamie Krutz is a freelance writer, editor, composer, and multimedia producer. Write to him c/o AmigaWorld *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

Manufacturers' Addresses

American Liquid Light
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Oxxi Inc.
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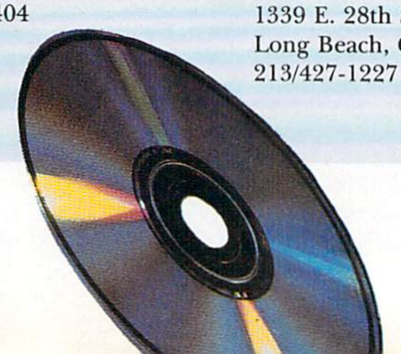
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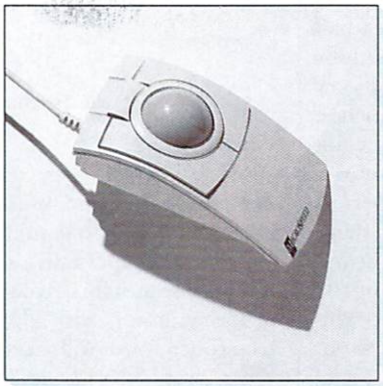
Replace That Interface!

When it comes to interactive multimedia, it may be better to set a trap for your mouse and give your keyboard a kick in the keester—as this survey of alternative interfaces will demonstrate.









ALTHOUGH MOUSE AND keyboard have become almost second nature to most Amiga users, other ways to interact with the computer often prove more effective in multimedia situations. There are many occasions where being "cord-bound" by mouse or keyboard seriously hinders the flow of interactive presentations. Greater freedom of movement, longer distances, more precise control, more intuitive approaches for inexperienced users, potential damage or vandalism—these are just some of the reasons for creators of multimedia presentations to explore alternative user interfaces.

Mice Without Tails

An infrared mouse works much like a television remote control, freeing the user from being cord-bound. Practical Solutions' **Cordless Mouse** ($129.95) sports a small infrared receiver, plugged into your mouse port, at which you then aim the mouse to operate. The three-button mouse sends both mouse movements and button clicks. While the mouse movements have a very different feel that takes a little getting used to, they do not seem sluggish or inaccurate.

Although this cordless mouse allows you to move ►

By Geoffrey Williams

PHOTOGRAPHED BY ED JUDICE

only about five feet away from the receiver, you can achieve long-range operation by obtaining a repeater that broadcasts an infrared signal to a remote location. DAK Industries' **Infrared Receiver/RF Transmitter** ($50) turns the infrared signal into a broadcast signal that lets you place the mouse up to 125 feet away from the computer. Moreover, unlike an infrared signal, you do not have to place the transmitter in line of sight with the receiver—you can even set it up in another room.

We use the infrared mouse in shows where the presenter holds it in his or her hand and uses it just like a slideshow remote control. One button advances the show, the other button goes to the previous slide or event. A cordless mouse clearly allows for much greater convenience and maneuverability. (While we're at it, maybe someone should make a wireless, handheld keyboard substitute for the Amiga—they already exist for the Mac and IBM.)

Conventional mice are nice, but, while they seem pretty intuitive to regular computer users by now, it



"A cordless mouse clearly allows for much greater convenience and maneuverability."

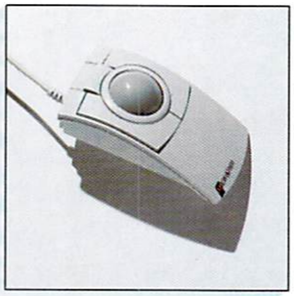
Practical Solutions' Cordless Mouse

is amazing how many people trying them for the first time have difficulty getting the knack. Moreover, a mouse and its mousepad area take up valuable space, and if used in a kiosk situation, the mouse is vulnerable to damage and vandalism. When your multimedia presentation warrants a different kind of interface, consider a trackball, which is like an upside-down mouse with the ball on top. For the trackball to operate, only the ball needs to move, not the whole assembly.

MicroSpeed's **AmTrac Trackball** ($99) has a ball that sits in the middle of the box with large buttons surrounding it on three sides. Easy to use and very intuitive, the trackball measures only 4 × 7.5 inches, and you can mount it permanently, as it does not have to move physically (a decided advantage in a stationary presentation environment). The large buttons can be labeled to explain what they do, and there is plenty of room to put a label on the box instructing users to "roll the ball to move the pointer on the screen." In addition, the Amtrac seems pretty durable, which is important because anything left out for unattended public use is going to take a lot of punishment.

Kraft Systems, makers of trackballs for the IBM PC, has recently produced an Amiga model called **Tripletrack**, which combines both mouse operations and trackball/joystick-type operations. In addition to the standard model ($99.95), the company offers a

"The trackball . . . does not have to move physically (a decided advantage in a stationary presentation environment)."



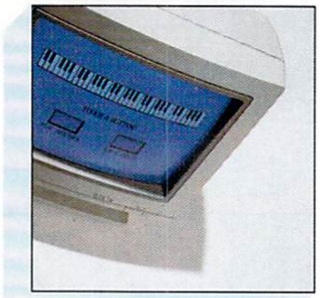
MicroSpeed's AmTrac Trackball

unique "Footpedal" version ($119.95), in which a floor pedal replaces the left mouse button in mouse mode. Pedal presses substitute for finger presses in dragging operations.

LOOK...AND DO TOUCH

The ultimate interface for a kiosk is the touch screen, which lets users touch the images on the screen—in effect, substituting their fingers for the mouse. Touching the screen acts as a mouse click at that position. For most interactive multimedia presentations, this is the easiest and most intuitive user interface. The transparent touch screen is attached directly to the front of the monitor screen. Touch screens for the Amiga include **AccuTouch** ($630, Elographics), **MicroTouch** ($795–895, MicroTouch Systems), and **Future Touch** ($895–1495, Amigo Business Computers).

"The ultimate interface for a Kiosk is the touch screen, which lets users touch the images on the screen."



A1950 Monitor with Touch Screen

Elographics' 13" AccuTouch has a 3000 × 3000 pixel resolution and uses resistive technology. The advantage here is that unlike capacitive touch screens, you can activate resistive screens with a gloved hand or a nonmetal stylus. AccuTouch attaches to the front of the monitor with double-stick velcro. To use AccuTouch, you will need the Commodore driver that is supplied with AmigaVision.

MicroTouch makes units for a variety of monitors, ►

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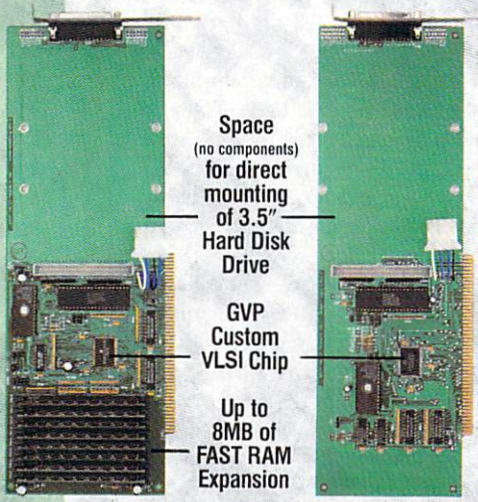
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  - ✓ Supports virtually any SCSI device including, CD-ROMs, Tape Drives, IOMEGA Bernoulli drives, etc.
  - ✓ Fully implements SCSI Disconnect/Reconnect protocol, allowing overlapping SCSI commands to be executed.
  - ✓ Fully implements Commodore's Rigid Disk Block (RDB) standard as well as the new DIRECT SCSI interface standard.
  - ✓ Removable media drive support. Automatically senses cartridge changes and informs AmigaDOS, ensuring safe and reliable use of removable media SCSI drives.
  - ✓ Allows Direct AUTOBOOT from Fast File System Partition.
- **New INTUITION COMPATIBLE SCSI installation** and "tuning" utility included. Major features include:
  - ✓ ICON and gadget based INTUITION interface.
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The Series II A2000 SCSI "Hard-Disk-Card"

- **Same as above** but without the 8MB FAST RAM capability.
- **Specially designed** for those users who don't need memory expansion but still need maximum hard disk performance at a budget price.
- **UNBEATABLE VALUE.** See $99 trade-up offer!

Hard-Disk+RAM-Card | Hard-Disk-Card



GVP's New *FAAASTROM* SCSI driver and installation software is also available as an upgrade kit for GVP's original IMPACT SCSI controllers, for ONLY $49.95. Offers major performance increase over previous GVP AUTOBOOT EPROMs.

New Series II 48MB Removable media hard disk drive. GVP now also offers the NEXT GENERATION removable media hard disk drive which offers increased capacity (48MB formatted) and major technological advances in cartridge air flow filtering design and robustness. Call for details.

SCSI TIMES — 1990

The ULTIMATE Trade-Up Offer???

GVP today introduced its new Series II product line and announced a bold new trade-up program, which is certain to further bolster GVP's dominant market share in the Amiga hard drive market.

Details of GVP's new TRADE-UP program are as follows:

- For $109 plus $6 for shipping (USA only), end-users can trade-up to the new GVP Series II SCSI "Hard-Disk-Card" (without drive) by simply sending in their present SCSI controller (from ANY manufacturer) together with a money order or certified check, payable directly to GVP.
- All trade-in controllers must be sent to GVP FREIGHT PREPAID.
- Owners of any GVP or Commodore SCSI controllers, are eligible for an additional $10 rebate, if they trade-in a FULLY FUNCTIONAL and working controller. These owners need to submit a certified check/money order for $105 only.
- For an additional $39, existing controllers can be traded-up to the new Series II "Hard-Disk + RAM-Card," which includes the 8MB FAST RAM expansion capability, populated with ZERO RAM.

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Dealers Circle 145 on Reader Service Card

Consumers Circle 62 on Reader Service Card

including the Commodore 1950, with prices ranging from $795 to $895. Its capacitive touch screens have a resolution of 1024 × 1024, and, like the AccuTouch, they have single-pixel precision. These units employ the same technology used in interactive displays at retail stores for the California Lottery, so they are very durable. They fit directly over your monitor picture tube (although you will have to open up the monitor to properly place the glass touch-screen panel); all you need do is install the supplied Amiga device driver and plug in the cable.

MicroTouch also manufactures a device called the **UnMouse** ($235), a touch screen built into a flat 3- × 5-inch clear tablet. Instead of attaching to the front of the monitor, it lies flat on a table, making it possible to put a template underneath it to show users which parts of the tablet to press to create different actions. Touching the tablet allows you to move the pointer around, while pressing your finger down acts as a mouse click. This allows you to control a show without interfering with the on-screen action; for example, a presenter could easily run a show

"Your body image appears as a single-color solid shape on the Vidi Mice set-up screen."

simply by touching icons or text on a template placed underneath the panel.

Amigo Business Computers offers Future Touch touch screens as part of an all-in-one package with a monitor. A 13-inch Commodore monitor with touch screen goes for $1195, while a 19-inch, open-frame monitor and touch screen sells for $1495. The company also offers—under certain conditions—a Future Touch kit to modify your existing monitor for $895.

A light pen allows a user to interact with the screen in somewhat the same way as does a touch screen, but the costs are a lot less. By bringing the light pen up to the screen and clicking the button on the side of the pen, you can simulate a mouse click on that part of the screen. Light pens offer a low-budget solution for kiosks where you want the users to interact directly with the screen. They do, however, represent one more piece of equipment subject to damage or vandalism.

Just a little larger than a ballpoint pen, Inkwell System's **Amiga Light Pen** ($129.95) plugs into your computer but leaves your mouse port free so that you can use your mouse and the light pen at the same time. It also has a second button for menu choices.

Although we have so far discussed only mechanical substitutes for the mouse, there are also entirely software-driven methods to move the mouse. Several public-domain programs allow you to record both mouse movements and keystrokes and to play them back in exact sequence. **Journal**, **MachIII**, and

"Light pens offer a low-budget solution for Kiosks where you want the user to interact with the screen."



Inkwell's Amiga Light Pen

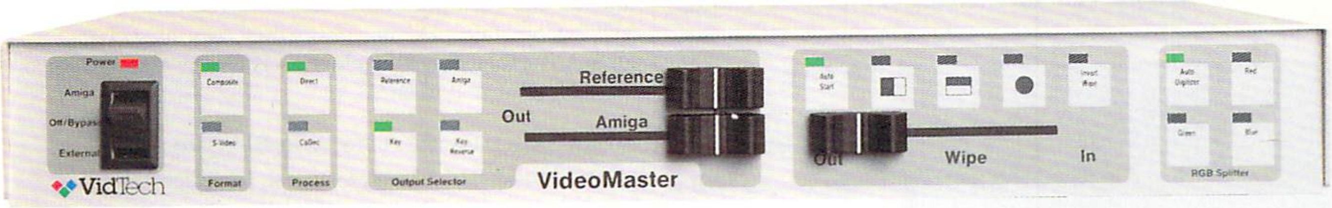
ScripIt (all available on Fred Fish disks) provide some pretty sophisticated interaction capabilities. MachIII even has an ARexx port so that ARexx-compatible multimedia programs can send it messages to control any aspect of the computer or other multitasking software. It is possible via ARexx to send a message to MachIII from your multimedia program that could, say, bring a DeluxePaint III screen to the front, then call Journal to play back the drawing of a picture, and finally return control to the multimedia program. This is an easy way to add extra capabilities to your multimedia software.

And How About the *User* As User Interface?

Still another way to interact with your computer is through your own voice, with devices such as Impulse's voice-recognition system, **VoRecOne** ($159.95). Although it currently has limited applications—you have to teach the program to recognize the words you want it to learn, and it is possible that it may confuse words that sound similar—VoRecOne is capable of getting the job done, responding instantly to the commands you taught it. You can assign individual keys or a series of keystrokes to any word you want, and you can even move the mouse and trigger mouse clicks with your voice. It does a very good job with sound effects, where confusion is much less likely than with words. You can even use it to synchronize images from a second computer based on specific sound effects. This is a very inexpensive way to synchronize two computers in a multimedia show.

Another, even more offbeat interface possibility is a variation on one of the more exciting products from the early days of the Amiga: The Mandala from Very Vivid. Using A-Squared Distributions' Live! digitizer ($450 for the A2000 version) and a video camera, it tracked your body movements and responded when your body crossed over certain hit areas on the screen. That technology has been unavailable since Very ►

VideoMaster
The Integrated Desktop Video System For Amiga Computers



VideoMaster integrates in a single system all the functions necessary to transform the Amiga computer into a fully featured multimedia workstation without using the video slot. VideoMaster performs the following functions:

- ◆ Genlocks the Amiga graphics to incoming composite (PAL or NTSC) or S-Video source (S-VHS, Hi8 or ED-BETA).
- ◆ The genlocked video production is available in composite and S-Video formats as well as RGB for optimum graphics.
- ◆ A built-in RGB splitter provides for direct connection to a digitizer including a compatible interface to Digi-View Gold 4.0.
- ◆ A special effects generator produces horizontal, vertical, circle and inverted wipes–automatically timed or manually controlled.

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Two Models
NTSC (RS-170A) and S-Video
PAL and S-Video 625

The S-Video, Y/C signal is processed independently in, through and out.

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Cut to any Amiga/Reference video combination in the next frame of your recording with no flicker or artifacts.

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Vertical, horizontal and circle wipes timed by VideoMaster or controlled manually. Inverted or combined multiple wipes for special and unusual effects.

Digitize External Images
Connect your Digi-View Gold 4.0 digitizer, set RGB splitter to Auto and VideoMaster will synchronize the digitizer to R, G and B signals. Under manual control, select RGB sequence and interface to most commercially available digitizers-no B & W camera with color-wheel required.

The S-VIDEO GENLOCK for all Amigas A-500/A-1000/A-2000/A-2500/A-3000

RGB Processor
VideoMaster generates RGB video and graphics for direct connection to an RGB monitor or projector. The standard Amiga monitor can display reference video and Amiga graphics optimally in RGB mode.

Transcoding
Create composite productions from S-Video reference source. Create S-Video productions from composite reference video. VideoMaster output is continuously available in all three formats. (Composite, S-Video, and RGB).

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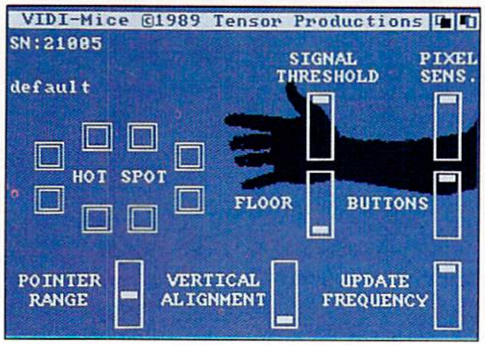
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VidTech

Circle 170 on Reader Service card.

Vivid pulled The Mandala from the general market, but, thanks to Joe Shen of Tensor Productions, it is possible to develop similar—and even more advanced—techniques of this kind.

Tensor's **Vidi Mice** ($85) also uses the Live! digi-



With Vidi Mice, you can use video representations of body images (like the hand at the left) that, when they touch certain areas of the screen, produce the same results as mouse clicks.

tizer and a video camera, but it works interactively with any software. You can establish areas on the screen that, when your video image touches them, produce the same results as pressing a specific key on the keyboard or clicking the mouse. With Vidi Mice, you are allowed more than 80 different virtual buttons on the screen. You can also have your video image touch the mouse pointer and have it follow your body or your hand.

At a major multimedia conference, we used it with TV*Show 2 ($99.95, Zuma Group) to trigger the left (forward) and right (reverse) mouse buttons. The presenter could go forward or backward in the show merely by gesturing to the right or to the left. We also set several function keys to trigger specific images simply by having the presenter reach up and to the left or right. You can even trigger key combinations for hotkeys (such as Right Amiga-M). You can use Vidi Mice to control with your video image any operation you can perform with the mouse or keyboard.

Your body image appears as a single-color solid shape on the Vidi Mice set-up screen so that you can easily see where to set up the buttons. You can invert your image or flip it horizontally or vertically. Your image is normally invisible when you go into a program to control it, but you can export your image to any bitplane of any screen you choose. If you want your live image to appear on, say, a DeluxePaint screen, you can do it very easily. You can even paint with your image. This is really exciting stuff!

Assuming that you have a genlock and that your body image is set at color 0, you can even make your body image transparent and genlock your real image through it, thus creating a sort of pseudo chromakey. Although you are somewhat limited by the quality of the Live! digitizer output, this still can produce a very striking effect.

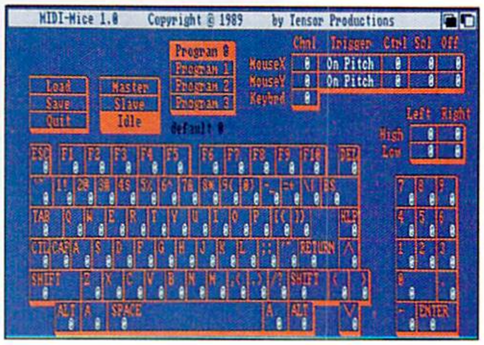
You also have absolute mouse-pointer control, 16 mouse-button positions, and 16 ARexx ports for very sophisticated interaction. Believe me, you experience a tremendous feeling of power in being able to make a gesture and bring up any image, animation, or sound effect. With Vidi Mice, you could start a multimedia show simply by the action of the presenter walking on stage. Having performed as a magician for many years, this is as close as I've ever come to the feeling of real magic.

Music, Virtual Reality, and Beyond...

MIDI (Musical Instrument Digital Interface) offers another option in the array of interface possibilities. Most of the presentation programs I have worked with do not offer full MIDI synchronization. **Midi Mice** ($85), also from Tensor Productions, does offer some interesting solutions to that problem. It listens for specific MIDI events to trigger keys or mouse movements.

Instead of basing your multimedia presentation on time, you can have it controlled by specific notes in the music played live from your MIDI keyboard. If you have two Amigas, you can use one to produce MIDI note information (done with DeluxeVideo III and AmigaVision), which can then be sent out to

Midi Mice (main screen pictured at right) lets you control multimedia presentations with music. Specific notes, played live from your MIDI keyboard, trigger keys or mouse movements.



another Amiga set up with Midi Mice and whatever software you want to control. This is an easy way to have one Amiga control another, which is an important consideration if you wish to create multi-image shows that project more than one image at a time on a wide screen.

With Midi Mice, you can base pointer movement on pitch value, velocity value, pitch-wheel parameters, or control-change parameters. You can, for example, set a specific channel number to trigger keyboard events using MIDI pitch values on that channel. Remember, too, that you have ARexx ports available, which opens up still further possibilities with MIDI.

Moving closer to the cutting edge, even more exciting user-interface activity centers around virtual reality (VR), which is the rage at a number of computer labs across the country. Mattel Toys brought VR to the home front with its Power Glove for the Nintendo system, which allows the user to wear a ►

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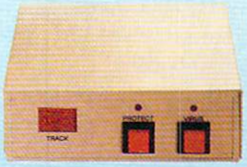


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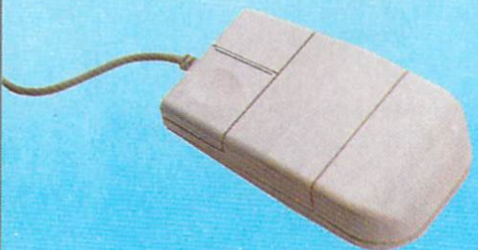
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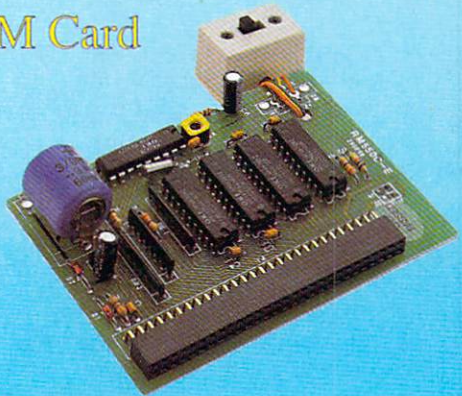


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RAM Card



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1.8 MB RAM Expansion Available

RocGen and Roc Knight are not offered to sell in U.S.A. until certification from FCC is awarded.

Circle 45 on Reader Service card.

Amiga is a registered trademark of Commodore, Inc.

glove that tracks finger and hand movements and then uses them to control games. Tensor's **Digi Mice** ($50) is a combination of interface and software that allows you to use the Power Glove with the Amiga. Its range of capabilities is limited—it acts like a joystick rather than a mouse—but if you want to experiment with software that is joystick-compatible, this may be exactly what you need.

In talking with one of the designers of the Power Glove, however, I was told that a simple, inexpensive modification could greatly increase the resolution and accuracy of the Power Glove. Tensor may be able to offer this modification in the future so that more accurate Power Glove control is available for the Amiga. Stayed tuned.

Tensor does seem to be at the forefront of alternative interfaces, and the company has announced another interesting prospect in **CyberScape** (scheduled to retail at $245), which has many of the neat features present in The Mandala, along with quite a number of new features of its own. It is reported to be an entirely video-triggered multimedia package. Besides support for images, brushes, and animations, it should also output MIDI, IFF sounds, and synthesized speech. It is slated to support ARexx messages and to send output through both the serial and parallel ports.

For purposes of interactivity, it promises collision detection, motion control, object hold and release, and object hierarchies. It is even supposed to support scorekeeping and interactive games. If you have lusted to play Nickelodeon's Eat A Bug game at home, you may soon be able to do so. There is a lot of possibility here, and CyberScape could represent a kind of interactive nirvana for clever multimedia producers. Imagine what something like this might mean if used in conjunction with NewTek's Video Toaster. We're talking about real-time quality digitizing that could also trigger events and allow users to interact with objects on the screen, while all the time the Toaster is producing broadcast-quality video. NewTek, take note!

As we have seen, there are a great many alternatives to the old mouse and keyboard interfaces. What the future holds is hard to foresee—ultrasonics, large-scale panels, and, perhaps in California, even the triggering of events based on earthquake magnitude? For now, we have plenty to play with and keep us busy for quite a while. ■

Geoffrey Williams is Executive Producer for Creative Business Communication and head of the Amiga Video-Graphics Guild. Write to hime c/o AmigaWorld, *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

Manufacturers' Addresses

A-Squared Distributions
6114 La Salle Ave.
Oakland, CA 94611
415/339-0339

Amigo Business Computers
192 Laurel Road
East Northport, NY 11731
516/757-7334

DAK Industries
8200 Remmet Ave.
Canoga Park, CA 91304
800/888-7808

Elographics
105 Randolph Road
Oak Ridge, TN 37830
615/482-4100

Fred Fish
Catalog Disk Update
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Tempe, AZ 85284

Impulse
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Minneapolis, MN 55435
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Inkwell Systems
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Vista, CA 92083
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508/694-9900

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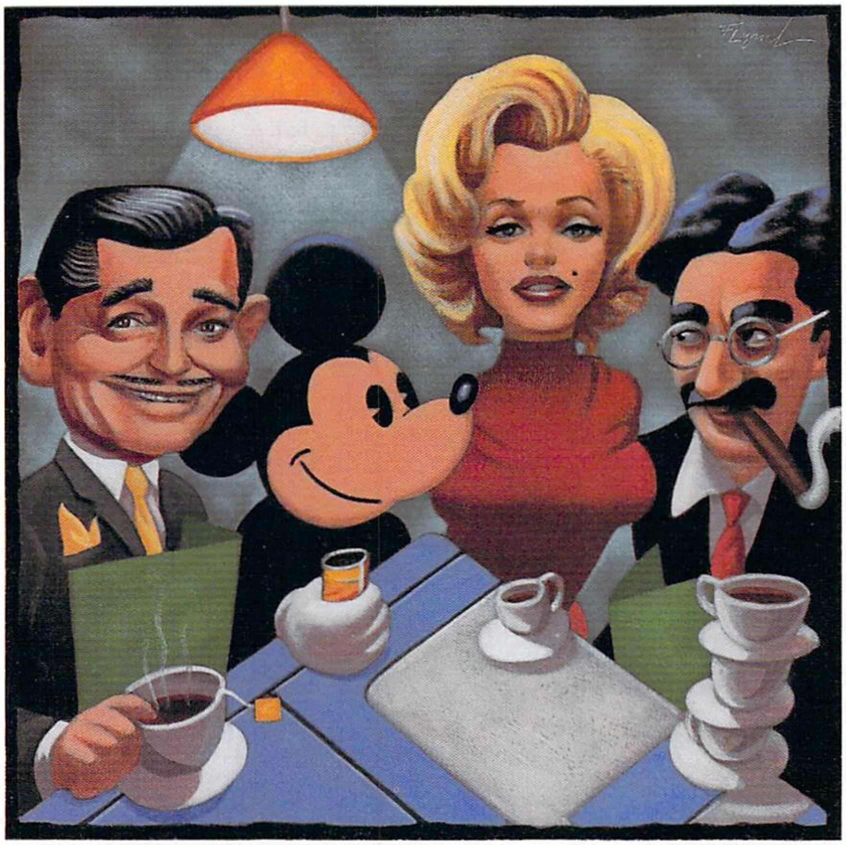
Tensor Productions
280 Mathilda Drive #9
Goleta, CA 93117
805/685-6245

Zuma Group
6733 Black Canyon Hwy.
Phoenix, AZ 85015
602/246-4238

MAKING MULTIMEDIA—3

Copy Rights And Wrongs

In selecting images for multimedia production, make sure you don't infringe on others' copyrights. By the same token, you need to guard your own creations from unauthorized copying.



IF YOU ARE a multimedia producer, the chances are that you frequently need to incorporate in your projects a variety of pre-existing sounds, photographs, music, animation, video, and text from a wide range of media sources. These may well form the core of your multimedia experiences, but tagging along in the shadows may be a host of copyright problems. Not only are you responsible for protecting your own creations, but you must ensure that you are legally entitled to use whatever you borrow from others.

THE BASICS

The old saw that "ideas are a dime a dozen" is certainly applicable to copyright law. According to the current rules, while ideas cannot be copyrighted, their tangible expression can. In other words, the *idea* to videotape your uncle Jim's wedding isn't eligible for copyright, but a videotape of the ceremony is. Written stories, recorded songs, a sculpture, or even a simple sketch all qualify for protection, regardless of their level of sophistication—a child's drawing is as eligible for copyright as is the cover of *Time* magazine.

Moreover, a work is automatically copyrighted at the lowest level the moment it is created. This is called protection and right "by creation," but the protection ►

By Gene Brawn

ILLUSTRATED BY FRED LYNCH

against infringement at this level is actually slight. To gain the fullest protection, the author or artist should also register the work with the US Copyright Office.

Using Others' Copyrighted Works

If you are a multimedia artist, it's all too easy to use an image without first checking its copyright status. If you are employed by a TV news organization, a newspaper, or a magazine, the "fair-use" provisions (see below) of the copyright act may cover you. If, on the other hand, the copyrighted work is used commercially (even if not necessarily for profit), then its use without permission is probably an infringement of an existing copyright. Infringement can occur in many situations, including internal use such as company newsletters and video programs, "educational" multimedia productions, and even trade show demonstrations.

If the copyright holder discovers and objects to your unauthorized use of his or her property, you may receive a notice to discontinue its use (although not mandatory, this is common), often followed by a lawsuit. If the suit succeeds, you can be barred from using the property in your production, fined as much as $100,000, and required to pay the plaintiff's legal fees and share any income derived from its use.

Obtaining rights to use a copyrighted work need not be complicated. A simple letter, signed by both parties, that outlines your project, explains how you plan to use the property, and states the fees to be paid (if any), is usually enough for the legal eagles. Dealing with Joint or Collective copyright holders (see discussion below) is a little more tricky. Owners of such material may not have all the rights they think they do. So you should indemnify yourself with a clause in the written agreement that relieves you of responsibility in case the owners have infringed on someone else's copyright.

Using works that you know to be in the public domain is one way to maintain your sanity in the copyright jungle. Because copyrights cover finite periods, all protected properties are eventually free for the public to use (see the sidebar "How Long Is a Copyright?" for time periods under current law). You are free to use anything in the public domain without restriction. Clip-art books are a good source of copyright-free images, and used book stores are a treasure trove of public-domain images, as old picture books and magazines abound with freely usable art. Although not free, stock photo houses are a good source of more contemporary scenes; for a fee, you can secure permission for a one-time use of thousands of photographs, illustrations, and even films.

Is It Infringement or Fair Use?

The only significant constraint on the rights of a copyright holder is the fair-use clause of the copyright act. The intent of the rule is to balance the creator's need to preserve his or her interests in the work and the public's reasonable right to use it. The fair use rule allows some unauthorized use without fear of infringement, including critical reviews, commentary, news, teaching, scholarship, and research. Anything else may constitute infringement and entail legal problems.

The advent of electronic digital media and the tools to manipulate them has created havoc in the graphic-arts community. It has suddenly become easy to digitize an image, stretch it, bend it, and warp it until it is all but unrecognizable. Using small clips of existing artwork is commonplace, but is it legal? Did you borrow more than you're entitled to without permission? How much do you have to change something before it becomes yours? These questions have not yet been settled for multimedia, much less for the digital graphic arts. Until they are, you will have ►

How Long Is a Copyright?

COPYRIGHT LAW WAS stable for many decades following its inception. The last ten years or so, however, have seen rapid changes in the rules, prompted by corresponding changes in technology. The last major revamping of the law occurred in the Copyright Act of 1976. The new law, taking effect on January 1, 1978, redefined the terms of new and old copyrights. Currently, the copyright periods are:

- For an individual author: the author's life, plus 50 years;
- For joint authorship: 50 years after the death of the last surviving author;
- For works-for-hire or anonymous works: 75 years from publication or 100 years from the date of creation, whichever is shorter;
- For works copyrighted before January 1, 1978, the period of protection was 28 years, with renewal for another 28 years. The 1976 Act, however, provided for a longer renewal period, with the result that any work registered—and with registration properly renewed—prior to January 1, 1978, is copyrighted for a maximum of 75 years. This means that, as of January 1 of this year, anything copyrighted before January 1, 1916, is now in the public domain.
- Anything created before 1978, and not properly copyrighted, *may* be in the public domain.
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—GB

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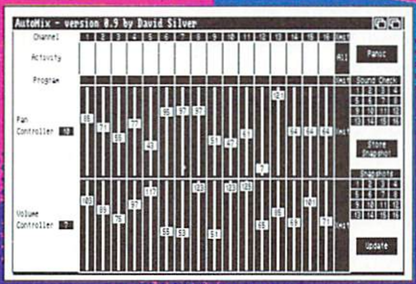
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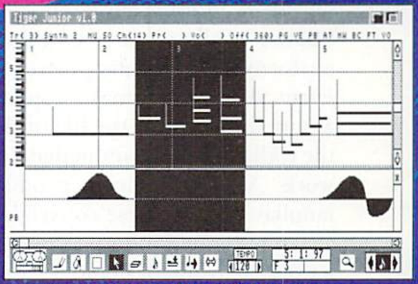
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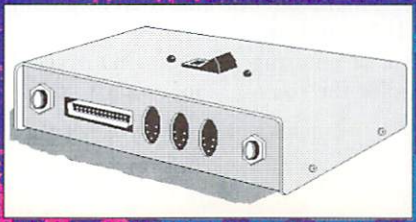
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to depend on professional help to guide you through the maze of opinion, rules, and laws.

Protecting Your Own Creation

Copyright protection, of course, works both ways. While multimedia artists more often may find themselves in a quandary about infringing upon the copyrights of others, they should also pay attention to protecting the rights to their own creations.

Although the Copyright Act of 1976 automatically protects any work created after January 1, 1978 (the date it went into effect), there are many benefits to formal registration that do not otherwise obtain. For example, it is only through registration that the copyright owner secures the right to file a lawsuit for infringement. Registration also establishes the date your work was created, makes it a matter of public record, and is also essential if you plan to sell or license your property. Although the registration process is simple enough to do yourself, consult an attorney before selling rights to your work.

The following is the procedure for registering the copyright of your creation. Place in the same envelope the appropriate application form (original only, not a photocopy), properly completed, along with a $10 check or money order stapled to the form and a deposit copy or copies of the work, and mail to The Register of Copyrights, Copyright Office, Library of Congress, Washington, DC 20559. Write the Information and Publications Section of the Copyright Office at the same address for instructions and application forms.

There are several categories of forms, grouped by creative medium. The most important document for multimedia producers is Form PA, formerly the sole province of composers, filmmakers, audio/video producers, and playwrights. Form TX is used for any nondramatic literary works—whether published or not—such as books, pamphlets, poetry, computer programs, advertising copy, and so on, except that magazines, newspapers, journals, or any publications of a serial nature are registered with Form SE. The fine artist, graphic designer, sculptor, and other practitioner of the visual arts will need Form VA, while performing musicians protect their recordings with Form SR. You can make application for registration at any time during the life of the original copyright, the right that exists immediately upon creation of the work. As a multimedia producer, you need to be familiar with all these copyright categories.

While the ubiquitous copyright notice printed on a work is no longer mandatory under the Act of 1976, you should nevertheless consider including it on all your works. It serves to identify you as the creator and to remind potential infringers that the work is protected by law. The notice is, however, mandatory on works created before January 1, 1978, and any such properties without it run the risk of entering the public domain. The accepted form for the copyright notice includes three elements: the © symbol, the word "Copyright," or the abbreviation "Copr."; the date of publication; and the name of the copyright owner. For example: © 1990 Gene Brawn.

Do not make the mistake of assuming that your registered copyright is in effect worldwide. International rights are determined by treaty and are subject to the signatory country's rules and regulations. Be aware that although a country is party to a treaty, that does not mean it must accept all the treaty's provisions. Be sure to check the target country's laws to determine your rights.

Copyright Classifications

The copyright application requires that you disclose whether or not the content of your property is original with you or whether its source is another, possibly copyrighted, work. You also must indicate if the property is the result of a collaboration. If you are the sole creator of your work and it is all original material, you will enjoy clear sailing through the regulatory jungle.

It is true, however, that the typical multimedia project is growing so large that its creation is often beyond the capabilities of a single artist. If no agreements are made beforehand, a multimedia property with multiple contributors is known as a Joint Creation, with each creator owning 100 percent of the work. Beware! Any such joint owner can grant *nonexclusive* rights to reproduce the joint property to anyone, at any time, without obtaining the consent of the other creator(s). The only favorable thing I can say about this provision is that the partner must share the proceeds from such a sale with the cocreators. On the other hand, the sale of *exclusive* rights must be agreed upon by all parties to the copyright.

I advise you to avoid the Joint Creation type of copyright at all costs; it is nothing but a legal can of worms. Where there are several authors, joint ownership is automatic unless agreed otherwise. By all means, take the option and "agree otherwise." Instead, use work-for-hire contracts (more on this below) or other written agreements to establish your position as the "sole creator" of the property.

If your creation is something like an anthology, composed of previously copyrighted works, the property is a Collective Work for purposes of copyright. This category does not relieve you of the necessity to secure permission to use whatever you incorporate into the work. In fact, those portions of the presentation used illegally will be excluded from the copyright (and you may be sued), although, interestingly enough, any portions of the work that *you* create are still covered by the registration.

Yet another classification is the Derivative Work. This is an original property, based on or containing parts of another copyrighted work, but different enough in form and expression to warrant a separate copyright. Both the author of the original work and

the adapter share the copyright. Be sure to obtain sufficient rights from the original copyright holder to allow you to fully exploit your new creation.

Work for Hire

Of concern to the producer as well as the independent contractor is the nebulous and contentious subject of work for hire. The problem centers on the question of who owns a copyright for a creative work, the employee/creator or the employer? The nod goes to the employer in those cases when the creator is a full-time employee and the property is created within the scope of his or her employment.

The status of the free-lancer's rights is cloudier. The current law, although more definitive than before 1978, is still fuzzy on the exact dividing line between an employee and an independent contractor. The courts have defined some guidelines in trying to resolve this question. Among them are: the location where the work was performed; the source of the creator's tools; the tax and benefit status of the free-lancer; the method of payment; the extent of the free-lancer's autonomy in choosing working hours and in engaging extra help; and the skill required to complete the job. Rather than getting caught up in a legal maze, be sure to get these questions settled in writing before work on the job begins.

This article has covered, of course, only the essentials of what you may need to know to protect yourself from suit and your work from infringement. The source books in the accompanying list provide a wealth of further detail, so by all means consult them. But now, at least, you have a frame of reference out of which you can ask some intelligent questions. ■

Gene Brawn is an interactive multimedia producer and contributing editor to AmigaWorld. *Write to him c/o* AmigaWorld *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

Resource Materials

The Desktop Publisher's Legal Handbook
by Daniel Sitarz
Nova Publishing Company
Carbondale, Illinois, 1989

Legal Guide for the Visual Artist
by Tad Crawford
Allworth Press
New York, New York, 1989

Make It Legal
by Lee Wilson
Allworth Press
New York, New York, 1990

The Multimedia Producer's Legal Survival Guide
by Stephen Ian MacIntosh
The Multimedia Computing Corporation
Santa Clara, California, 1990

The Writer's Legal Companion
by Brad Bunnin and Peter Beren
Addison-Wesley Publishing Company
Reading, Massachusetts, 1988

The "Ami 500"

A THREE-PART GUIDE TO UPGRADING YOUR A500

Part 1: Revving Up With RAM

To make it around this grueling course, you'll need sound strategies for expansion. At our first pit stop here in Part 1, let's pull in for a RAM supercharge.

By John Wolfskill

When the checkered flag goes down and you're running with all you've got, and you find that your current RAM supply limits your software options, it's time to upgrade. Thanks to the abundant stock of RAM boards available for the A500, you have many avenues to explore before you part with your hard-earned cash. You can attach RAM to the A500's external system bus, install it inside the system case, or fit it into the A501 expansion slot on the underside of the case.

Depending on the upgrade path you choose and the expansion devices you have already added to your system, you may need to replace your A500's tiny 35-watt power supply with a more powerful model. An A500 equipped with just 512K of RAM and one external disk drive draws about 2 amps of electrical current from the maximum 4.3 amps (at +5 volts) the stock supply can safely deliver. To avoid problems, the total current load of all further expansion devices must be less than 2.3 amps.

If a 512K card is your only add-on device, there is no need to replace your power supply. Greater-capacity upgrades are another matter. If your new board does not have its own power supply, you can use this rule of thumb to determine if you will need to spring for a new power supply before you begin: 1MB RAM = roughly .75 amps. (Some kinds of chips draw less power than others. If you want to obtain more information on types of chips, and on memory in general, see "Memory to the Max," p. 85, Dec. '89. Also refer to the sidebar "Are You Going Fast?" later in this article for a discussion of the different RAM types.)

If you're planning to install your new RAM board youself, you should know that there are two revisions of the A500's motherboard (5 and 6A) that may require different expansion hardware. To avoid disappointment, make sure you specify your motherboard version when you order the card. (You'll find the revision number stamped on the bottom right corner of your motherboard.) Also, remember that when you open your A500's case, you render null and void Commodore's system warranty. ►

CATCHING UP

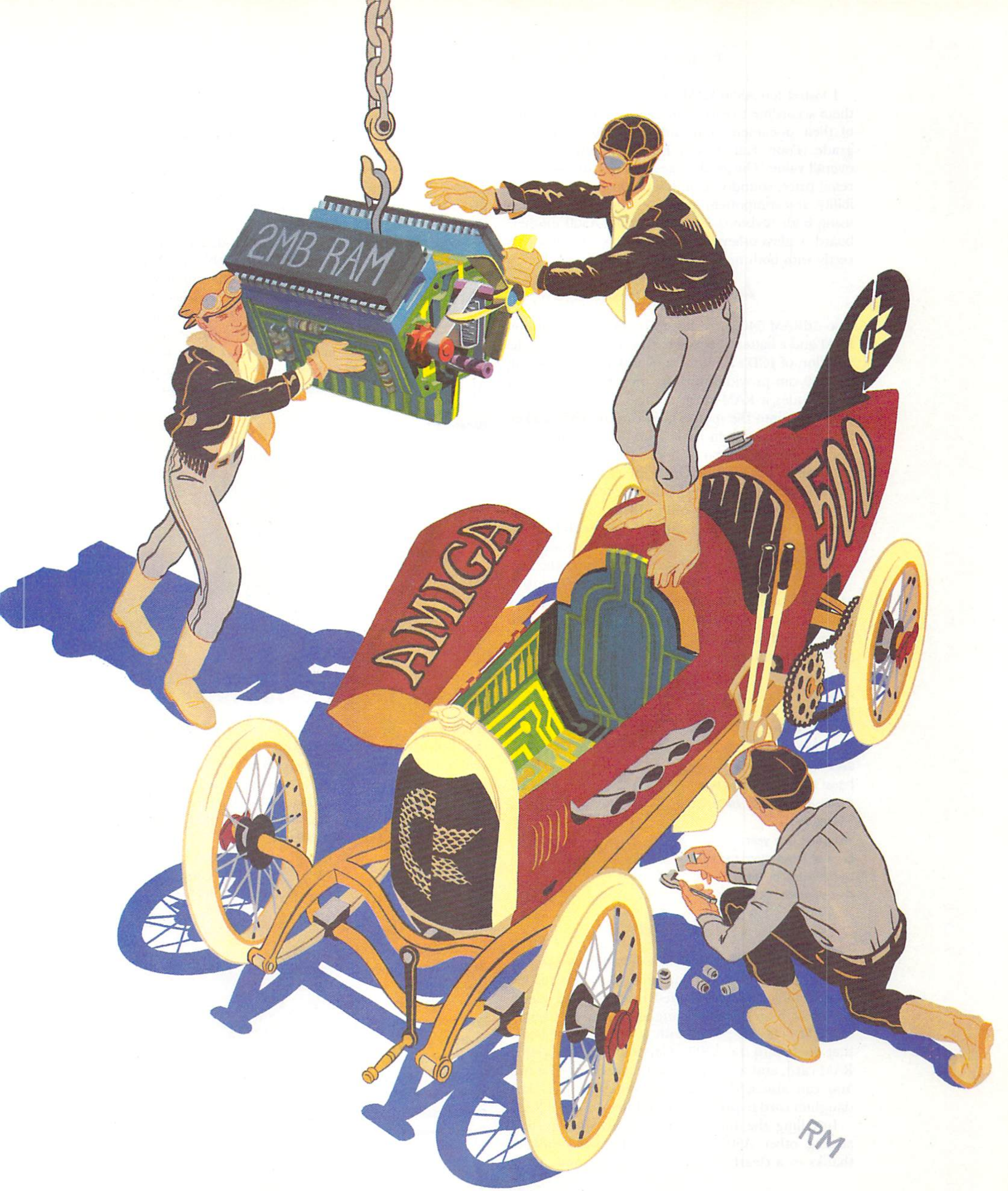
ALTHOUGH IT HAS always had the same software capabilities as the A2000, the A500's architecture makes it inherently more difficult to expand. For this reason, fewer types of hardware expansion devices have been available for the A500 than for the A2000. As a result, the Amiga's potential has often been just out of reach for A500 owners. For example, although the A500 can run CAD software, previous lack of a flicker-reduction device (such as MicroWay's flickerFixer for the A2000) has made working with CAD undesirable on the 500. Lately, however, third-party developers have discovered ways around many of the A500's design limitations.

You can now do almost anything with an Amiga 500 that you can with a 2000. You can attach super high-capacity storage devices. You can show interlaced displays without flicker. You can run MS-DOS software. You can add an accelerator to speed up applications, and you can expand memory to the full 9MB that the A500's (and A2000's) architecture can address. Finally, with the addition of an expansion box containing Zorro-2 and IBM-compatible slots, you can add cards that were designed to work only with the A2000 and, theoretically at least, match all the capabilities of the 2000, save for those options that require the video slot.

In this three-part series, we will explore the ways in which you can add on to your A500. We'll determine which are the most convenient methods for expansion and which leave you the best options for possible future additions. We'll also expose any limitations hidden in promised end-all solutions. In the final installment of the series, we'll assemble the "ultimate" A500 hot rod—a fully-expanded machine with our recommended components for high-power use.

We've limited Part 1 of the series to memory-only expansion devices. Although many manufacturers now supply RAM sockets in their A500 hard-drive models, we will save discussion of those units for Part 2 of the series, in which we'll focus on hard-disk systems. Finally, in Part 3, we'll evaluate accelerators that speed up operations, card cages that accommodate A2000-style cards, and some miscellaneous peripherals that provide specific enhancements. □

—Barbara Gefvert



ILLUSTRATED BY ROBERT MORRISSEY

I tested ten A500 RAM expansion devices, rating them according to ease of installation and the quality of their documentation and assigning each one a grade (Poor, Fair, Good, Excellent, Superior) for overall value. The grade takes into consideration the retail price, soundness of design, hardware compatibility, and component quality. I tested all the boards using both revisions 5 and 6A of the A500 motherboard. Unless otherwise stated, all boards work correctly with both motherboard revisions.

AdRAM 540

The AdRAM 540 provides up to 4MB of expansion RAM and a battery-backed hardware clock. With the addition of ICD's A560D piggyback daughterboard, the 540 can provide up to six megabytes. The basic kit includes a RAM card, a small secondary board that plugs into the motherboard's Gary chip socket, and a ten-pin ribbon cable. For the most part, the documentation is clear.

Installation is simple: Open the case, relocate the A500's Gary chip to a socket on the secondary card, and then connect the cards with the ribbon cable. Your A500 can recognize most of the new RAM, and IDC provides a program to add to your startup-sequence file that lets your system recognize the rest.

The AdRAM 540 is well-designed, easy to install and works as it should. Even if you're not thrilled by the slim 90-day warranty on the chips (the board itself is warranted for one year) you will find the AdRAM 540 a good choice for a serious RAM upgrade.

AdRAM 540
ICD
Capacity: 4MB
Type: A501 slot
Super Agnus kit: Yes
Price: $159.95 (unpopulated)
Expansion options: 2MB A560D ($259.95)
Warranty: One year
Ease of installation: Excellent
Documentation: Good
Overall value: Good

Baseboard

Baseboard is another device designed for those who need a muscle-beach RAM upgrade. Like the AdRAM 540, it adds a battery-backed clock and, in combination with an optional daughter card, up to 6MB of RAM. The kit comes with a small circuit board that plugs into the A500's Gary chip socket, a 4MB RAM card, and a 20-pin cable that connects the two. You can also add Expansion Systems' Overboard daughter card to provide an additional 2MB of RAM.

Installing the Baseboard is more complex than adding other A501 cards, but no more difficult, thanks to a clearly written, detailed manual. Open your A500's case, remove the Gary chip and replace it with the circuit board, insert the RAM card into the underside A501 connector, and then attach the 20-pin cable between the cards. Depending on which Agnus chip your A500 uses, you will also need to reset a few jumper plugs on both cards and add a program to your startup-sequence that configures the boards once your A500 boots.

The Baseboard RAM card is a high-quality, four-layer card that should help eliminate problems when you attempt to mix RAM chips with different access speeds (or chips from different manufacturers) on the same card. Although the clock battery is not rechargeable, you can replace it without soldering.

If you want more than the essential 512K RAM upgrade for your A501 slot, or if you need Super Agnus support, the Baseboard system is the way to go.

Baseboard
Expansion Systems
Capacity: 4MB
Type: A501 slot
Super Agnus kit: Yes
Price: $159.95 (unpopulated)
Expansion options: 2MB Overboard ($139.95 with 512K)
Warranty: One year
Ease of installation: Superior
Documentation: Excellent
Overall value: Superior

Half-Megabyte Memory With Clock-Calendar

A spitting image of Commodore's A501 RAM card, this full-size board comes with 512K RAM on 16 (256K × 1 bit) chips and a clock, all housed in a sturdy metal case. The clock is powered by a 3-cell, 3.6-volt NiCad battery. Both the board and its components are constructed of high-quality materials that should provide years of dependable operation.

Documentation consists of a small booklet with good instructions, and the two-year parts-and-labor warranty is a plus. Looks like a solid value.

Half-Megabyte Memory with Clock-Calendar
Skyles Electric Works
Capacity: 512K
Type: A501 slot
Super Agnus kit: No
Price: $79.95
Expansion options: None
Warranty: Two years
Ease of installation: Excellent
Documentation: Excellent
Overall value: Excellent ►

3 THREE NEW PRODUCTS FROM ICD

Flicker Free Video™

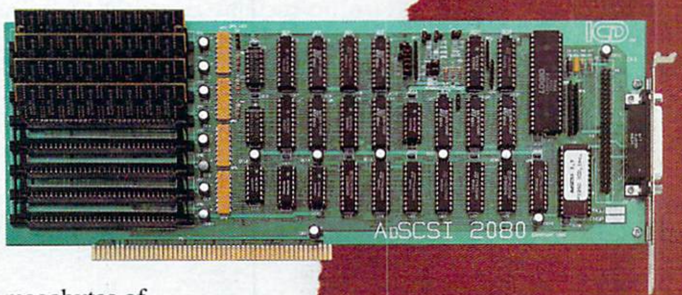
With *Flicker Free Video* (FFV) and a standard VGA or multi–frequency monitor, any Amiga® 500, 1000, or 2000 computer can produce a high quality display, free of interlace flicker and visible scan lines. Installation requires no soldering or advanced technical knowledge and frees the video slot in Amiga 2000 computers for other uses. *FFV* is compatible with all software, works in low and high resolutions interlaced or not, and has no genlock conflicts. *FFV* uses a multi–layer circuit board and surface–mounted components, packing a lot of power into a very small space. Both PAL and NTSC are automatically recognized and fully supported. Full overscan is supported, not just a limited overscan. Three megabits of random access memory are used to ensure compatibility with overscan screens as large as the Amiga can produce.

Ad*Speed*™



ICD expands its line of innovative enhancement products for the Amiga with the introduction of Ad*Speed*, a full featured 14.3 MHz 68000 accelerator for *all* 68000–based Amiga computers. Ad*Speed* differs from other accelerators by using an intelligent 16K static RAM cache to allow zero wait state execution of many operations at twice the regular speed. *All* programs will show improvement. Ad*Speed* will make your Amiga run faster than any 68000 or 68020 accelerator without on–board RAM. Ad*Speed* works with all 68000 based Amiga computers, including the 500, 1000, and 2000. Installation is simple and requires no soldering. Ad*Speed* has a software selectable true 7.16 MHz 68000 mode for 100% compatibility — your computer will run as if the stock CPU was installed. 32K of high speed static RAM is used for 16K of data/instruction cache and 16K of cache tag memory. A full read and write–through cache provides maximum speed.

AdSCSI™ 2080



The fastest, most versatile SCSI host adapter (hard drive interface) available for the Amiga 2000 now comes in a new configuration. *AdSCSI 2080 is not* DMA, but its clean design and advanced caching driver provide greater throughput than any available DMA interface. All the features you want are included at no additional charge: autoboot from Fast File System partitions, Commodore® SCSIDirect and Rigid Disk Block conformance for no mountlist editing and compatibility with third party SCSI devices, and the most advanced removable media support available, including automatic DiskChange and no partitioning restrictions. *AdSCSI 2080* also includes sockets for adding two, four, six, or eight megabytes of RAM using 1 megabyte SIMMs. If expansion slots are in high demand, then this card could be your answer.

Flicker Free Video, AdSpeed, and *AdSCSI 2080* join ICD's existing and growing line of power peripherals and enhancements for Amiga computers. Our experience and expertise allow us to give you the products and support you deserve. From beginning to end, every possible aspect of product development and production is handled in–house. We design all the hardware, lay out all the circuit boards, and write all the software. We assemble and test our products in our own facility, providing us with an unmatched level of control over the finished product. It is never out of our hands. These are more examples of the advantages you get from ICD. The best product. At the best price. With the best support. No compromises.

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M501-s

The M501-s provides 512K RAM expansion and a battery-backed clock. The small 4.3 × 3.5-inch board is similar to Commodore's A501 memory board, but the M501-s also provides a miniature slide switch that lets you disable the board for the benefit of ill-behaved games and other programs that balk at the sight of RAM expansion. The 3-volt Lithium clock battery has a life expectancy of three or more years.

I found the installation instructions accurate and clearly written. Despite its low price, this board uses quality components throughout. A bargain for those who need a quick 512K RAM upgrade, the M501-s is available only through Amiga dealers.

M501-s
Microbotics
Capacity: 512K
Type: A501 slot
Super Agnus kit: No
Price: $80.95
Expansion options: None
Warranty: One year
Ease of installation: Excellent
Documentation: Good
Overall value: Good

Micromegs

Micromegs wins the prize for the most compact RAM expansion card. The tiny 2 × 3.25-inch board provides 512K of RAM—using only four CMOS (4 bit × 256K) chips—and a clock, whose 3-volt Lithium battery is soldered in place. A toggle switch allows you to disable the card without removing it from the system.

Terse instructions cover the do's and don'ts of installation, but do not fully explain the card's features. Consider this inexpensive, low-power board if you have already installed enough extras to place a strain on your A500's power supply.

Micromegs
MAST
Capacity: 512K
Type: A501 slot
Super Agnus kit: No
Price: $69
Expansion options: None
Warranty: One year
Ease of installation: Good
Documentation: Fair
Overall value: Fair

Minimegs

If you want to add 2MB of true fast RAM to your system, you won't find a simpler solution than Minimegs. MAST provides a pure and simple solution for those who don't mind giving up their CPU slot for memory expansion; the unit provides no pass-through bus extension. The module comes with up to 2MB of SIP (Single Inline Package) RAM chips soldered onto a metal-encased board. Simply remove the board from its wrappings, plug it into the CPU expansion slot, and turn on your A500. Considering the task at hand, the documentation is adequate.

Minimegs
MAST
Capacity: 2MB
Type: CPU slot
Super Agnus kit: No
Price: $269 (sold fully populated only)
Expansion options: None
Warranty: One year
Ease of installation: Excellent
Documentation: Good
Overall value: Good

RamWorks 500

RamWorks 500 comes with 16 (256K × 1 bit) RAM chips that provide 512K of RAM and a 3.6-volt NiCad battery-driven clock. The RamWorks 500 uses all high-quality components and comes with a well-written, illustrated manual that provides clear, step-by-step instructions. The company offers a whopping five-year warranty. My pick of the 512K A501 litter.

RamWorks 500
Applied Engineering
Capacity: 512K
Type: A501 slot
Super Agnus kit: No
Price: $79
Expansion options: None
Warranty: 5 years
Ease of installation: Superior
Documentation: Superior
Overall value: Superior

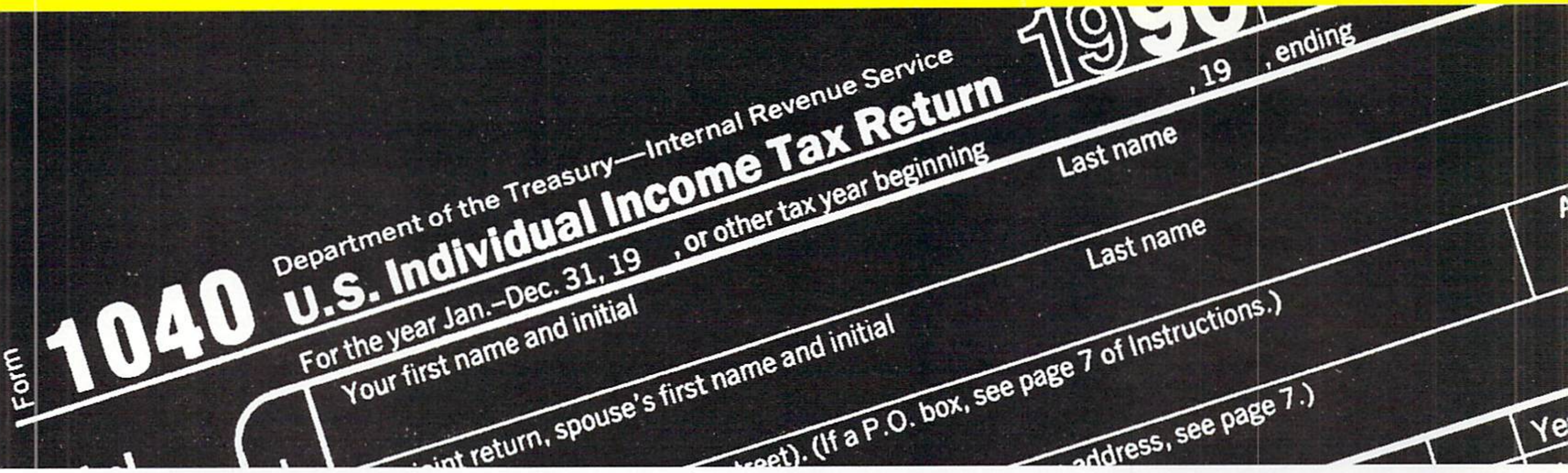
RC-500

The RC-500, a two-layer board, uses four (256K × 4 bit) RAM chips to supply 512K of RAM. A small toggle switch allows you to disable the board if necessary. ►

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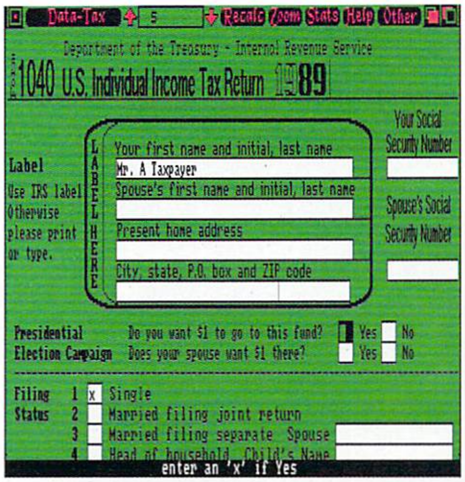
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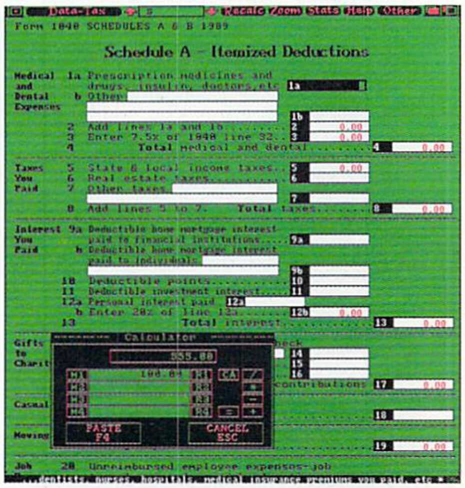


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Clock power is provided by a rechargeable 3-volt battery. Documentation consists of a small, ten-page booklet that contains everything you need to know about the board.

RC-500
Konyo International
Capacity: 512K
Type: A501 slot
Super Agnus kit: No
Price: $89
Expansion options: None
Warranty: One year
Ease of installation: Excellent
Documentation: Fair
Overall value: Fair

SIN500-2

The SIN500-2 RAM card replaces the 68000 CPU with an internal RAM card that can add 2MB of memory to your system without tying up your CPU or A501 slots. The handsome, seven-inch-square board comes with its own 68000 CPU and 16 sockets in which you can mount up to 2MB of true fast (256K×4 bit) RAM. The sheaf of instructions provides a good step-by-step tutorial you will need to follow in order to install and test the card—although installation is relatively simple. Open the case, remove the existing CPU chip, insert the board, install a pair of nylon standoffs to hold the card in place, and then reassemble the A500.

If you are concerned about the SIN500-2 overloading your A500's power supply, the company has thoughtfully provided a way to attach an optional DC power supply that can power the board directly.

Spirit Technology also provides a program to check your new RAM chips for flaws. I can attest that the program works as advertised, and that the company does not test each board before shipping it. When I ran the test program, it pointed to a pair of bad RAM chips. Upon investigation, I found both problems were caused by pins not properly inserted in their socket holes. Nevertheless, the SIN500-2 is a well-designed board that deserves your attention. If you prefer an internal RAM upgrade, this board offers possibilities.

SIN500-2
Spirit Technology
Capacity: 2MB
Type: Internal
Super Agnus kit: No
Price: $199 (unpopulated)
Expansion options: External power supply ($21)
Warranty: One year
Ease of installation: Excellent
Documentation: Excellent
Overall value: Good ►

Are You Going Fast?

WHEN READING ABOUT memory-expansion devices, you've probably encountered the terms "fast," "slow-fast," and "slow" or "chip" RAM. Confusing? Yes. But if you care about system performance, it helps to know the difference before you invest in a new RAM card.

Both the Amiga's 68000 CPU and the custom animation chip (Agnus) can generate RAM addresses, which they use to access the memory in your system. The CPU can access all RAM in the computer, while the Agnus chip can access only a designated portion (512K or 1MB) of the total RAM available. Fast RAM is memory that can operate at the same speed as the CPU. You can install this type of memory only in designated areas of the CPU's address space that have been set aside for the CPU's exclusive use. Slow RAM and so-called slow-fast RAM can be accessed by both the Agnus chip and the CPU.

Because it would be a disaster if both chips were allowed to access the same RAM address simultaneously, there are times when performance-robbing "wait states" must be inserted in the timing cycle to keep the two chips from setting a collision course. Regardless of what some manufacturers claim, RAM chips installed in the underside A501 slot provide only slow-fast RAM for the system. The CPU cannot access it as high-speed fast RAM. If you want a true fast-RAM upgrade, you need to purchase a card that attaches to the A500's CPU expansion connector, or an internal card that plugs directly into the CPU socket.

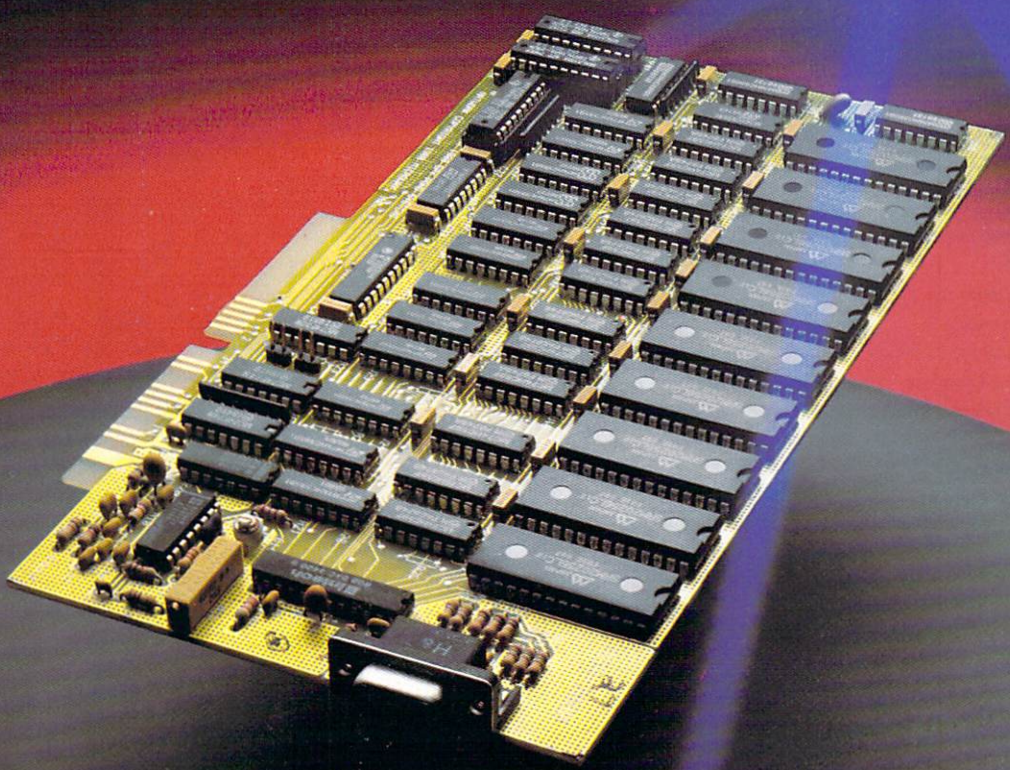
REMEMBERING AGNUS

Some RAM board manufacturers provide a kit that allows users of late-model A500s who have installed a Super Agnus chip to perform an advanced installation procedure that assigns a portion of the new memory as chip RAM. This upgrade boosts the A500's chip RAM up to its maximum capacity of one megabyte, and, in the process of doing so, allows you to perform at top capacity with graphics-intensive applications.

You know your A500 has a Super Agnus chip if the part number stamped on its ceramic case is 8372 or 8372A. If the number stamped on the chip is 8370 or 8371, you have a standard Agnus chip and need to buy and insert a Super Agnus chip before you can proceed with the advanced installation, which is no walk in the park. It involves minor soldering skills and requires cutting a trace path on your A500's motherboard. If you have never tackled a job like this, have your local Amiga dealer perform the upgrade for you. □

—JW

AGA 2000
The flickerFixer™



AMIGA 3000 QUALITY IS ALREADY ON YOUR DESK WITH FLICKERFIXER

flickerFixer is the original advanced graphics adaptor that eliminates your Amiga 2000/2500's interlace flicker and visible scan lines. With processor upgrade kits, such as the GVP 3001, you can have the best performance and graphics available on a desktop. ***flickerFixer*** provides superior quality color graphics and text for such demanding applications as CAD/CAM, Desktop Presentation, Graphic Design, Animation, 3D Modeling, and Multimedia Video.

Compatibility: *flickerFixer* is plug compatible with the new Commodore 1950 Multiscan or any of the popular VGA or Multiscanning Monitors. It is also compatible with the Enhanced Chip Set and the new AmigaDOS 2.0.

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Accolades include: Best of 1988 Award, Commodore Magazine; ***#1 Reader's Choice Award,*** AMIGAWORLD. ***flickerFixer*** is made in the USA and is FCC Class B approved.

flickerFixer fits into the Amiga video slot or the Microway Denise Extender, is fully compatible with all software, and does not modify the standard Amiga video signals. For more information, call Microway Sales at (508) 746-7341 or your Amiga Dealer.

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SupraRam 500

The SupraRam 500 board provides 512K RAM (4 bit × 256K) expansion and a battery-backed clock on a compact five-chip circuit board. A 3-volt battery provides up to three years of clock power. This high-quality board comes with a single sheet of clearly written instructions.

SupraRam 500
Supra Corp.
Capacity: 512K
Type: A501 slot
Super Agnus kit: No
Price: $99.95
Expansion options: none
Warranty: One year
Ease of installation: Excellent
Documentation: Excellent
Overall value: Good

Switchable 512K RAM Expansion Board

This full-size A501-slot card comes with 512K RAM on 16 (256K × 1 bit) chips in two models, one with and one without a battery-powered clock. The two-layer circuit board provides a toggle switch that allows you to disable the card.

Documentation consists of a single sheet of paper with installation instructions on one side and a schematic diagram of the board on the other. Although the card is reasonably priced, its overall value is offset by the slim 90-day warranty period.

Switchable 512K RAM Expansion Board
Rio/Datel
Capacity: 512K
Type: A501 slot
Super Agnus kit: No
Price: $49.99 ($69.99 with clock)
Expansion options: None
Warranty: 90 days
Ease of installation: Excellent
Documentation: Good
Overall value: Good

Consider your future expansion plans carefully before you buy a memory device for your A500. Keep in mind that when you add memory to your A501 slot, you give up the ability to use other cards (such as Pulsar's Power PC Board) that require the A501 connector. Also, when you add an external RAM board without a pass-through connector for the bus (such as Minimegs), you may give up much more, such as adding a hard drive or a box to hold A2000-style cards (unless *they* have pass-through bus ports).

If you don't already own a hard disk but plan to buy one shortly, you may want to put off a RAM-only purchase and consider adding both upgrades in one box. Join us next month for our second lap around the Ami 500 course, when we will look at various hard-drive options—both with and without memory. ■

Manufacturers' Addresses:

Applied Engineering
3210 Beltline Rd.
Dallas, TX 75234
214/241-6060

Expansion Systems
44862 Osgood Rd.
Fremont, CA 94539
415/656-2890

ICD
1220 Rock St.
Rockford, IL 61101
815/968-2228
800/373-7700

Konyo International
1073 North Batavia
Suite B
Orange, CA 92667
714/633-1026
800/356-5178

MAST
1395 Greg St.
Sparks, NV 89431
702/359-0444

Microbotics
1251 American Pkwy.
Richardson, TX 75081
214/437-5330

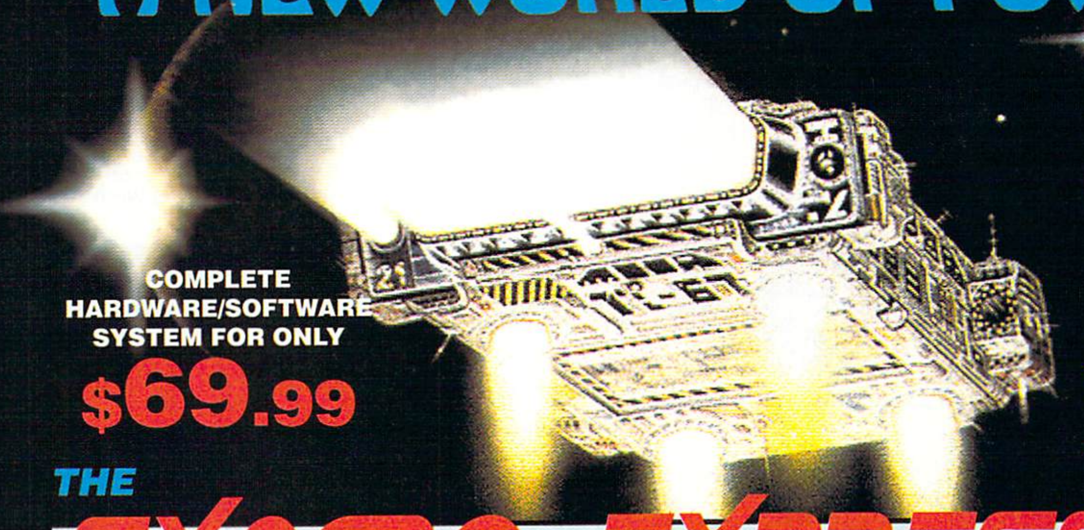
RIO/Datel
3430 E. Tropicana Ave.
Unit # 65
Las Vegas, NV 89821
702/454-7700

Skyles Electric Works
231-E South Whisman Rd.
Mountain View, CA 94041
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800/227-9998

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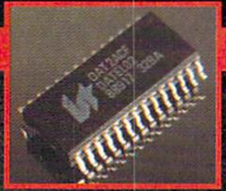
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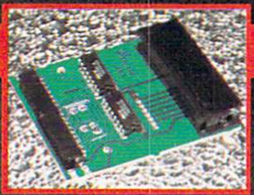
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HAM Compositing

Photo-compositing in HAM mode can help artists increase their mastery of computer painting.

#24

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

AS WE SAW in the November '90 installment of "Accent," photo compositing opens up a whole world of interesting and often playful possibilities. While that column focused on photo-compositing methods in DeluxePaint III (Electronic Arts), this month I will explore HAM photo-compositing techniques using Digi-Paint 3 and Digi-View (both NewTek), and PIXmate (Progressive Peripherals). Deluxe PhotoLab (Electronic Arts) also possesses excellent HAM compositing tools, as does Photon Paint 2.0 (MicroIllusions).

These techniques apply to digitized material as well as computer paintings. If you are not a skilled computer artist, you may find compositing to be of particular interest. I will emphasize methods that modify the digitized material in painterly ways. The end result is intended to be more an artistic image than an illusion of reality, as was the case in November.

Choosing the Right Stuff

I decided on a space theme for the image that would become the illustration accompanying this column. Beginning with a NASA photo of an Atlas lift-off and another of a Mercury astronaut, I digitized both black-and-white images with Digi-View—setting Sharpness down to its lowest point and turning Dither off. This softened the images, but, more importantly, it broke the detail up into solid value areas. This kind of simplification of detail is one of the stylistic strategies I frequently employ in the computer medium. I saved the Atlas picture in 16 colors to preserve all the transitions in the flame and smoke.

The astronaut was to be the focus of the finished piece. I wanted him to stand out from the rest of the image with strong contrast in his shadow areas. My first step was to select 32-color mode from Digi-View's Control panel and redisplay the image. Because it had been a red scan, the image now became a 16-color red picture. Switching to the Palette controls, I reduced the colors to eight, forcing a further simplification of the image.

I find it most effective to do this reduction at the digitizing stage because calculations are based on original 24-bit data. Once you save the image, that depth of image information is no longer available. It is still possible to reduce the number of colors afterwards with PIXmate, DeluxePaint, or other programs, but the delineated value areas will differ from those Digi-View can calculate before the 24-bit data is lost. This can prove important with such details as eyes. I redisplayed and then saved the eight-color astronaut image.

I ran both images through PIXmate to color and further process them before compositing and touch-up. Loading the astronaut, I performed a Sort Colors operation from the menu and then brought up the Palette controls. I made the high-end reds yellow-orange for a highlight effect. Wishing to simplify the detail even more, I selected an AVG averaging operation from the Image Process controls. This preserved the palette but reduced detail to make the image bolder. I saved this image and loaded the Atlas picture. Using Palette, I gave it a fiery range of colors, with pure saturated yellow at the high end, and orange-red at the low end. Knowing that the astronaut was on the right side of his image area, I went

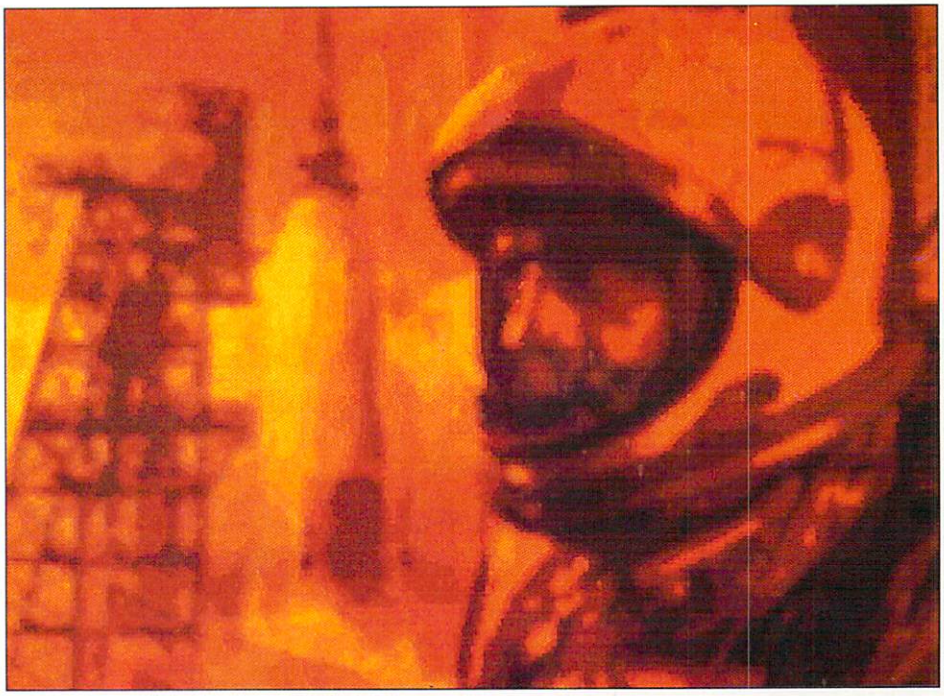
to the Display controls to perform a horizontal flip of the Atlas image to position the rocket and gantry on the left side of the screen. Saving this image, I quit PIXmate.

In Digi-Paint, I loaded the Atlas image first, electing to load its palette as well. Hitting the j key to bring up the spare screen, I loaded the astronaut there, keeping the Atlas base palette. Both images loaded cleanly with few HAM artifacts, even though I had forced them to share the same base palette for the sake of clean compositing operations. I was now ready to begin experimenting with different effects.

The first and most obvious choice was to try a simple merging of the two screens. (You will find Merge under the Swap submenu of the Picture menu.) Merge operates with the entire spare screen and follows the mode and transparency settings for its effect. With Normal mode and no transparency, the swap screen simply replaces the current screen. I tried 50% transparency and merged the screens. The effect was cluttered. The concentration of detail on the left side of the astronaut image became confusing when merged with the gantry detail.

BACK TO THE DRAWING BOARD

I experimented with other modes, still at 50% transparency. Colorize mode produced interesting results: The hot yellows of the Atlas image colored the shadow areas of the astronaut while preserving detail. There was no focal point, however, and again the image was too cluttered. On the other hand, the And mode worked quite well: Wonderful abstract shapes emerged on the left of a strong composition. I saved this image as reference for a future acrylic painting.



The finished HAM image above is the result of manipulating and then combining the two original black-and-white images—the Mercury astronaut (foreground right) and the Atlas lift-off (background left)—and then further processing the composite image.

For this column, however, I continued to experiment with the original concept for the illustration. I wanted to preserve the image of the Atlas lift-off in the final composite. I selected Digi-Paint's Filled Freehand tool and a single-pixel brush. Working on the astronaut image, I kept the Atlas on the swap screen. I set the Hotspot transparency slider all the way up and the Edge slider at the halfway point. I then selected Rub-Through mode from the menu. (Rub-Through places part of the swap screen on the current image according to the tool, mode, and settings you have chosen.)

I carefully drew around the front of the helmet and pressure suit, across the bottom of the screen, up the left side, and back across the top. When the shape filled in, the Atlas had replaced the cluttered detail on the left, and the overall result looked pretty good to me. I drew quick shapes around a few areas I wanted to emphasize a bit more, bringing them more solidly into the composition. I then selected Darken mode and knocked the right side of the image back into shadow. In Colorize mode, I selected bright yellow and 50% transparency, and drew highlights on the helmet to pick up some yellow light.

Loading the image back into PIXmate, I did a final average process on the HAM image—both to get rid of the artifacts and fringing that had crept in and to soften the look. As images always print darker than they appear on screen, I then loaded it into Digi-View's or Transfer 24's 4096+ mode and raised the brightness five notches before sending it to the editors.

Experiment with some of these methods as a starting point for your own illustrations. You can obtain wonderful results from any two random images you load for compositing. Remember also when using compositing techniques that after you have completed your "finished" picture, you can always load a new swap screen to continue your compositing efforts into still further realms of image exploration. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.

Fax It with ARexx!

By Tim Grantham

BECAUSE AREXX SCRIPTS can talk to several programs at once, they can act as software coordinators, enabling programs to work together to perform an automated task. An illustration of ARexx's communication process is the example below, called fax.rexx.

Fax.rexx uses Handshake V2.20, Eric Haberfellner's fine shareware VT100/220 terminal emulator, and CompuServe's fax capabilities. Besides Handshake's ARexx support, fax.rexx takes advantage of Handshake's invisible mode: When invoked with the −n switch, Handshake loads and runs, but does not open a screen. In this mode, it can sit quietly in the background, acting as a serial communications server for any program that speaks ARexx.

ARexx and compatible application programs communicate through messages. When an ARexx program wishes to invoke a command or call a function in a supporting program, it must explicitly state the program with which it wants to talk. The line

```
address 'HANDSHAKE1'
```

for example, causes the ARexx interpreter to send all subsequent messages to the first running instance of the program Handshake. A message selecting a Handshake (or any program-specific) command does not require a reply message, but a message calling a Handshake function does need a reply.

When an ARexx program calls a Handshake function, the ARexx interpreter sends a message containing the function requested to the Handshake program, plus any additional data required by Handshake to execute the function. In fax.rexx, for example, the line

```
HS_STRING('+++ATZ'cr)
```

causes the ARexx interpreter to send a message instructing Handshake to transmit the string +++ATZ and a carriage return out of the serial port, exactly as though you had typed it from the keyboard. The line

```
r=HS_GETSTR('OK')
```

instructs Handshake to monitor the stream of characters coming over the modem for the string OK. The previously issued command

```
HS_TIMEOUT 40
```

tells Handshake to look for the string for no more than 40 seconds. While Handshake is doing this, the ARexx interpreter suspends execution of the ARexx program. Without the time-out, the Arexx program might be suspended forever!

If Handshake finds the string before the allotted time expires, it returns a message that contains the matched string to the ARexx interpreter, which then assigns the string to the variable r and restarts the ARexx program.

If Handshake does not find the string before time runs out, it stops looking and sends a message back to the ARexx interpreter containing the string HSERR TIMEOUT. The ARexx interpreter also assigns that string to the variable r and restarts the ARexx program. It's up to the programmer to see whether the string was found.

The following lines provide an example of how an ARexx program mediates this dialog between the ARexx interpreter and Handshake:

```
cr='0d'x
HS_STRING('+++ATZ'cr)
r=HS_GETSTR('OK')
if r='OK' then
  HS_DIAL('CIS (2400)')
else do
  say "Couldn't reset modem. Quitting."
  exit 20
  end
```

The first line assigns the carriage-return character to the variable cr, so you can include the character in a string. The second line tells Handshake to send the string +++ATZ, plus the carriage return. This causes Hayes command-compatible modems to reset. The second line tells Handshake to look for the string OK, which is issued by the modem upon completion of a reset. The next two lines instruct Handshake to dial the number for CompuServe, but only if it has ►


FULL METAL PLANET
IRON GUTS MORLA
SECRET
IRON GUTS MORLA
FULL METAL PLANET
DRACONIAN

received the string OK before the timeout. Otherwise, the ARexx program assumes the modem couldn't reset properly, and it therefore exits.

In addition, fax.rexx uses the following Handshake functions and commands, provided specifically for ARexx programs:

Functions:

- HS_DIAL dials a number from the Handshake telephone list.
- HS_TRANSMIT starts transmission of a file.

Commands:

- HS_PROTOCOL sets the file-transfer type.
- HS_HANGUP tells the modem to hang up.
- HS_QUIT shuts down Handshake.

Other terminal emulators that support ARexx (e.g., Online!, ATalk III, and VLT) provide similar commands. You should be able to adapt fax.rexx to work with your own program quite easily.

To run fax.rexx, you must have started the ARexx resident program, Rexxmast, beforehand. Then, at the CLI, enter the following command:

rx fax.rexx filename phone_number subject : name

where filename is the name of the file containing the text of the message, and phone_number is the number of the destination fax machine. (Note: CompuServe requires the area code.) Subject : name consists of the message's subject heading and the addressee's name. You cannot use spaces in the filename or telephone number. While the subject and name argument can contain multiple words and spaces, the two elements must be separated by a colon.

For example, if fax.rexx resides in the REXX: logical device, the invocation could be:

rx fax myfax.txt 609-555-5555 Project estimate : Ms. Paula Manning, Director

If you forget the format, simply enter rx fax, and fax.rexx will prompt you for the required information. This method, however, prevents you from launching the program as a separate process via AmigaDOS's Run command. If Handshake is not already running, fax.rexx loads and runs it in invisible mode. If Handshake is running, fax.rexx leaves it running when fax.rexx exits.

Fax.rexx uses the communications settings contained in file s:handshake.parms to communicate with CompuServe (baud rate, number of stop bits, telephone number, and so forth). If you wish to use other settings, then these must be loaded from a parameters file specified when you first run Handshake, either from within fax.rexx or from the CLI.

If you would like to watch fax.rexx in action, run Handshake in its standard visible mode before running fax.rexx. After starting fax.rexx, switch to the Handshake screen to view the interaction among ARexx, Handshake, and CompuServe.

You can use fax.rexx as a framework to begin writing your own scripts. For starters, you could try improving this program so that it could accept fax filenames with spaces in them, or so it could let you know the cost of your fax.

Tim Grantham was formerly Editor of Transactor *and is now a freelance writer. Write to him c/o* AmigaWorld *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

Listing 1. This fax.rexx program automates faxing a text file via CompuServe and Handshake v. 2.0.

```
/* fax.rexx - faxes a text file via CompuServe, using
* Handshake v2.20
*
* rx fax.rexx filename phone_number subject : name
*
* Be sure to insert your own CIS ID number and
* password into the source code before you run this
* program, and alter the argument to the HS_DIAL
* function to the label you use for the CompuServe
* telephone number.
*
*  October 26, 1990, Copyright (c) 1990 Tim Grantham
*  Thanks, Bill Hawes! Thanks, Eric Haberfellner!
*/

ctrlc = '03'x
ctrlo = '0f'x
cr    = '0d'x
running = 1

/* get the arguments from the command line */

parse arg filename telephone sub_name

if filename = "" then do
   say "Enter name of file to fax..."
   parse pull filename
   end

if telephone = "" then do
   say "Enter phone number, with area code(s)..."
   parse pull telephone
   end

if sub_name = "" then do
   say "Enter subject : name. As in..."
   say "Project estimate: Ms. Lois Lane, Director"
   parse pull sub_name
   end

/* check to see if the fax text file exists */

if ~open(fax_text, filename, 'R') then do
   say "Couldn't access fax text file."
   exit 40
   end

/* extract the subject and name */

length = index(sub_name,":")
subject = left(sub_name,length-1)
name = substr(sub_name,length+1)
name = strip(name,"B")

/* check if Handshake is running. If not, run it. */
address command
```

►



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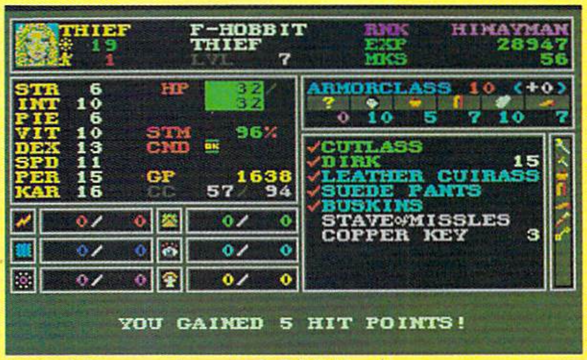
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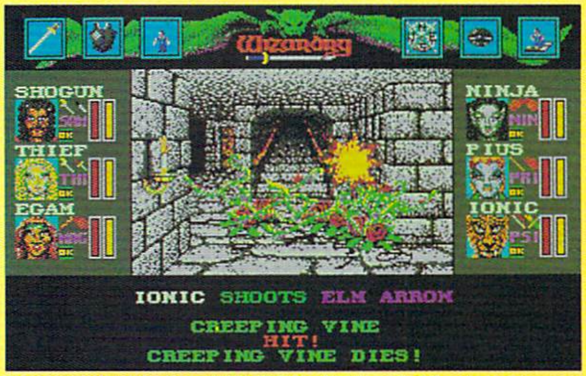
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```
do forever
   r = show(ports,'HANDSHAKE1')
   if r = 1 then break
   running = 0
   'handshake -n -p s:handshake.parms'
   end

/* begin talking to Handshake */

address 'HANDSHAKE1'

HS_STRING('+++ATZ'cr)

r = HS_GETSTR('OK')

if r = 'OK' then
   HS_DIAL('CIS (2400)')

else do
   say "Couldn't reset modem. Quitting..."
   if running = 0 then HS_QUIT
   exit 20
   end

HS_TIMEOUT 40

HS_STRING(ctrlc)

r = HS_GETSTR('ID:')

if r = 'ID:' then
   HS_STRING('12345,6789\my_password'cr)

else quit1("Couldn't connect to CIS properly.",)

r = HS_GETSTR('CompuServe')

if r = 'CompuServe' then
   HS_STRING(ctrlo'g mail'cr)

else quit1("Connected to CIS but couldn't log on.")

r = HS_GETSTR('Mail!')

if r = 'Mail!' then
   HS_STRING('upload'cr)

else quit2("Logged on but couldn't get to CIS Mail.")

r = HS_GETSTR('Protocol:')

if r = 'Protocol:' then
   HS_STRING('xmodem'cr)

else quit3("Couldn't initiate upload in CIS Mail.")

r = HS_GETSTR('Type:')

if r = 'Type:' then
   HS_STRING('ascii'cr)

else quit3("Began upload; couldn't pick protocol.")

r = HS_GETSTR('completed.')

if r = 'completed.' then do
   HS_PROTOCOL 'xmodem/crc'
   HS_TRANSMIT(filename)
   end
else quit3("Picked protocol; file type pick failed.")

HS_STRING('send'cr)

/* If Handshake could recover from the upload quickly
* enough, the following ARexx code would be used
* instead of the line immediately preceding.
*
*  r = HS_GETSTR('SEND!')
*
*  if r = 'SEND!' then
*     HS_STRING('send'cr)
*  else do
*     say "Fax text upload bombed out."
*     HS_STRING(ctrlc'bye'cr)
*     HS_HANGUP
*     if running = 0 then HS_QUIT
*     exit 20
*     end
*/

r = HS_GETSTR('ID):')

if r = 'ID):' then
   HS_STRING('>fax 'telephone||cr)

else quit3("Uploaded fax text but couldn't Send it.")

r = HS_GETSTR('Subject:')

if r = 'Subject:' then
   HS_STRING(subject||cr)

else quit3("Uploaded fax text; couldn't address it.")

r = HS_GETSTR('Attention:')

if r = 'Attention:' then
   HS_STRING(name||cr)

else quit3("Send started; couldn't specify subject.")

r = HS_GETSTR('(Y or N)!')

if r = '(Y or N)!' then
   HS_STRING('y'cr)

else quit3("Send started; Attention: line failed.")

r = HS_GETSTR('Mail!')

if r = 'Mail!' then do
   HS_STRING('bye'cr)
   HS_HANGUP
   say "Fax transmitted!"
   if running = 0 then HS_QUIT
   exit 0
   end

else quit2("Maybe success; no final 'Mail!' prompt.")

quit1:

   parse arg x
   say x
   HS_HANGUP
   if running = 0 then HS_QUIT
   exit 20
   end

quit2:

   parse arg x
   say x
   HS_STRING('bye'cr)
   HS_HANGUP
   if running = 0 then HS_QUIT
   exit 20
   end

quit3:

   parse arg x
   say x
   HS_STRING(ctrlc'bye'cr)
   HS_HANGUP
   if running = 0 then HS_QUIT
   exit 20
   end
```

■

Video Disc Mastering

By Gene Brawn

THE FIRST TIME I considered producing a video disc, I thought the project would be a cinch. After all, isn't a video disc just a flat, round videotape? Wrong. Although the final production is assembled on videotape and then transferred to disc, the content and process are very different from the typical linear video production. As proof of this, try viewing an interactive disc from beginning to end: Scenes jump from subject to subject, scores of still frames whiz by unrecognizably, and strange sounds emerge from your speakers.

Obviously, an interactive video disc is more than your average TV show. Still a black art to many would-be producers, "voodoo video" is a complex medium that incorporates both hi-tech video and computer control. The following guidelines should demystify the process and give you a pretty clear idea of some of its complications.

Video Disc Formats

Two formats dominate the video-disc marketplace. At 60 minutes per disc side, the popular CLV (Constant Linear Velocity) format is the consumer's choice for simple, linear fare such as theatrical films and how-to shows. The CAV (Constant Angular Velocity) format, giving you 30 minutes per side, is reserved for interactive video productions.

CAV machines (and discs) come in four flavors, or "levels." In Level I, the simplest, the user navigates the video disc by entering choices from a handheld remote control. This format is limited by the simple set of controls included with consumer players. The typical Level II disc is designed for a more advanced industrial player with built-in computer control. It comes complete with a digital script embedded on the disc, and it is commonly singled out for simple educational and training tasks. Level III units rely on external computers to provide their instructions. Your Amiga is very good at generating menus, buttons, text blocks, and sounds. With it and the Level III player, you can make room on your video disc for more important subjects.

Still in its formative stages, Level IV includes all of the features of Level III, plus digital data encoded on the video disc that's accessible to an external computer. This eliminates the floppy or hard disk required by Level III hardware, and is ideal for point-of-sale systems.

Production Basics

Producing an interactive video disc is normally a five-step process. First, you create the individual pieces (modules), using live and still video/photography, text, and audio. Next, write the interactive script or program that controls the presentation. Third, test the program and your interface. Fourth, assemble and record the master videotape that the manufacturer will use to create the "mother" video disc. Finally, prepare a document for the mastering facility that describes the final form of your disc. Keyed to time code, your script should indicate the first and last video frames, chapters, and still frames.

Regardless of the interactive level of your production, your master videotape must contain a few standardized elements. A few of the most common are listed below, but none of these are chiseled in stone; always check with your mastering facility before you finalize your plans. (For extensive discussions of requirements and terminology definitions, call 3M, Pioneer, ►

VideoTitler 3D

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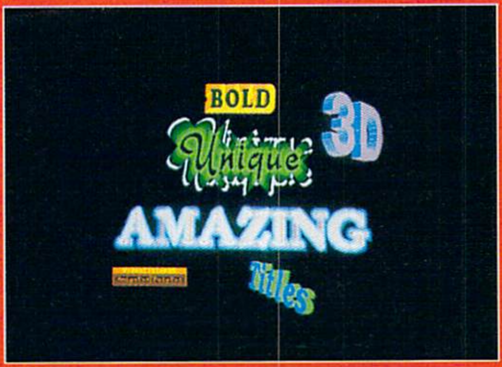
At last, the power of a professional titling workstation comes to the Amiga. Full 3D rotation of text, exciting new fonts, amazing effects and more make **VideoTitler 3D** the perfect solution for desktop video and graphic presentation needs.

Using **VideoTitler 3D**'s simple to understand 3D text handles, titles can be spun, stretched, rotated, tilted, put into perspective, and much more. Add to this the 3D extrusion capabilities, huge number of special effects, and ability to use any standard Amiga font, and you have the ultimate information presentation system.

VideoTitler 3D offers a large number of included fonts, such as sampler styles from Kara Fonts™ and Zuma Fonts™, even new PolyFont technology based on outline fonts! This new PolyFont format brings a number of standard type styles to the Amiga for the true professional look that you demand.

But **VideoTitler 3D** doesn't just create still images. Bring your text to life with the incredible animation capabilities of **VideoTitler 3D**.

Animations are created by specifying the beginning and ending frames and the number of intervening frames. VideoTitler will automatically generate the intervening frames. Save the final result in an ANIM format file which can then be edited or shown using many popular Amiga programs!



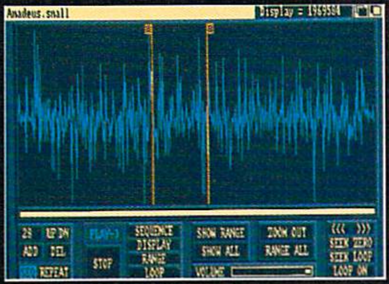
Create spectacular special effects for text using **VideoTitler 3D's** powerful effect editor, or use one of the built-in effects such as star, neon, glow, embossed, and balloon. **VideoTitler 3D** can also mirror, skew, resize, and distort fonts from a variety of sources, control shadows and 3D effects, even use IFF picture files as backdrops and fills.

AUDIOMASTER III

Painting With Sound

AudioMaster III is the next generation of Amiga sound sampling software for the Amiga. Using the most advanced technique for real-time sound sampling, **AudioMaster III** gives you sample rates up to 56K in stereo on a standard Amiga! All current sound sampling hardware is supported for sampling from sources such as a microphone, CD player, video system, or anything you can plug into your sampler.

Special effect tools allow you to visually alter the waveform in a true interactive editing environment. Add echo to your sound, backmasking, low pass filtering, flanging, alter pitch and playback speed and much more! Effects such as echo, digital delay, and flange can all be accomplished in real time as well!



AudioMaster III's newest and most exciting feature is the sequencing. Where most sampling packages give you the ability to repeat a single loop over and over, **AudioMaster III** allows you up to 999 separate loops within a single sample. What this means to you is the ability to take a 20 second sound sample and turn it into a song lasting as long as 2 hours! Try to imagine the many possibilities for soundtracking of video, creating your own remixes, or just playing around! **AudioMaster III**'s sample length is limited only by your machine's main memory, a tremendous amount of high-quality audio is possible!



That's not all **AudioMaster III** has going for it! The author, Peter Norman of RamScan Software, has an affinity for compact discs. Thus we have included the Aegis CD Player Simulator for your listening pleasure. Load up to 20 songs or samples to play in the background via a fully-simulated compact disc player. Since it's fully multi-tasking, the Aegis CD Player can bring a whole afternoon of music to you while you work on other projects!

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or Technidisc for their manuals. They are extremely helpful.)

• Pay particular attention to your intended delivery system. Confirm with the mastering facility that what they produce will play correctly on your system. (Despite what you may think, video discs are not standardized in all their particulars.)

• Use broadcast-standard, one-inch, type C video recorders (Hi-band is recommended).

• Almost all video masters begin with two minutes of color bars and a 1000 KHz audio tone. This is followed by 40 seconds of video black with no audio, then the start of the interactive program material. Finally, the last active video is followed by 40 additional seconds of video black without audio.

• Always record in nondrop-frame mode. If your video comes from a third-party source over which you have no control, don't worry. Most manufacturers can fix the tape for a conversion fee. (See the accompanying chart for more details.)

• Be sure that you maintain consistent field-dominance in your editing. Every video frame is made up of two fields, and editors choose which to use for a cut. Always pick one field and stick with it throughout the entire tape. To ensure consistency, re-edit any third-party video to conform to your standard.

• Submit a written description of your interactive opus, consisting of the start and end of the active video segments on your disc, keyed to SMPTE time code. Also use the time code to indicate the positions of any still frames or chapter stops on the disc. Many manufactures often require a written description of the first video frame on your disc. This ensures that you both synchronize your watches and agree where the important stuff starts.

Learn from Our Mistakes

The following tidbits, in no particular order, are courtesy of The School of Hard Knocks. (Thanks to fellow graduates Scott Roy Smith of Media Learning Systems and Robert Edgar of Commodore for swapping tales of woe with me.)

• Because you probably don't have a one-inch video studio in your bedroom, you will have to rent time from a production house to create your master videotape. Keep this time to a minimum, or it will quickly become the most expensive part of your production. For example, don't waste time and money putting menus, buttons, and other changing elements on the video disc. Your Amiga can easily generate and overlay these, and ►

Comparison of disc-production costs.

Manufacturer	Mastering Fees				Check Disc	Replication Fees		Formats	Special Services/Notes
	10 Day	5 Day	3 Day	1 Day		Quantity	Price per disc		
3M Optical Recording 1425 Parkway Dr. Menomonie, WI 54751 715/235-5567	$1800, 8 day max.	$2600	$3100	$4000	$750	1–49 50–399 400–699 700–999 1000+	$18 $14 $12 $10 $8.50	3/4", 1", D2	Restriping $100; same-day turnaround $6000; 1 free remastering with check disc; storage service; Alpha Disc $450; 5-day turnaround (extra copies $250); 1-day turnaround $950.
Disc Manufacturing, Inc. 1120 Cosby Way Anaheim, CA 92806 714/630-6700	$1800	$2300	$2550	—	$750	All amounts	$12	3/4", 1", D2, OMDR disc	Restriping free; digital audio capability; glass LaserMaster disc $900; 6-day turnaround (additional copies $600); $1900 same-day turnaround.
Philips/DuPont Optical Co. 1409 Foulk Rd Suite 200 Wilmington, DE 19803 800/433-DISC	$1800	—	$2900	—	$900	1–100 101–500 501–1000 1000+	$17 $14 $12 $10	3/4", 1", D2, OMDR disc	Video services priced by hour; SECAM and PAL mastering capability.
Pioneer Communications of America, Inc. Laser Optical Products Div. 600 E. Crescent Ave. Upper Saddle River, NJ 07458 201/327-6400	$1900	$2600	$2800	$3800	$400	1–499 500–999 1000+	$9.50 $8.50 $8.00	1", D2	Variety of video production services; digital and multiaudio capability; reorder service.
Technidisc, Inc. 2250 Meijer Dr. Troy, MI 48084 800/321-9610 (main) 213/459-5537 (LA) 716/223-0900 (NY)	$1800	$2500	$3000	$4000	$300	1–99 100–499 500–999 1000+	$15 $13 $10 $8.50	1", D2	Restriping $100; 3/4" bumped to 1" $200; Superdisc DRAW disc, $750 for 3–5 day turnaround, $1500 for same-day turnaround; storage; custom label and jacket service.

making the inevitable changes later will be easier and cheaper.

• Map your discs intelligently: put recurring elements, such as menu backgrounds, in the center of the disc; then you need to traverse only half of the disc to find your track. Also consider how fast the player can move the head to the next segment. In many cases this determines where you locate the video track on the disc. How you map a disc is instrumental in its success. If it is too slow, the user may lose interest.

• Although some discs enjoy the luxury of numeric IDs recorded on the disc, many others do not. This has caused no end of confusion, because there is often no ready way to determine which side of a double-sided disc is in the player. One common solution is to put a uniquely numbered chapter stop on each side of the disc for the program or script to read and identify.

• Put pictures on inside tracks. The outside of the disc may warp, causing noise in pictures, picture loss, and other undesirable events. On the other hand, there is more band width on the outside tracks, producing a slightly better picture. The choice is yours.

• As mentioned above, many mastering facilities require, in addition to the disc layout, a description of the first video frame on the disc. If you really want to be safe, put a unique picture as the first frame. . . and be sure you can describe it in twenty-five words or less.

• If you have access to D2 (digital video) technology, most facilities can now master directly from your digital tape for the highest possible quality. John Kohan-Matlick's Video-It D2 facility in Los Angeles offers production services for videodisc producers. Call him for details at 213/280-0505.

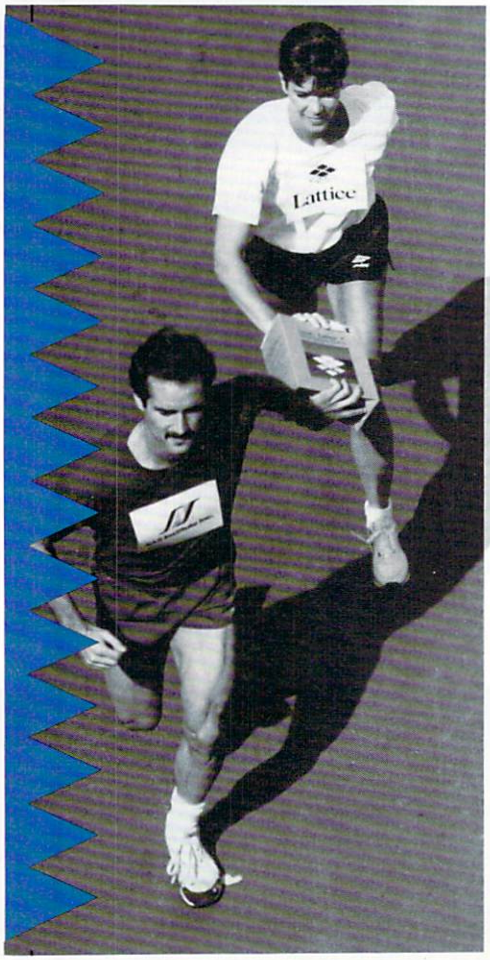
Pressing Time

The actual manufacturing cycle consists of sending the master videotape to the disc-production facility, which masters and then returns an optional check disc to you. Be sure to use this option; it will save extra costs later. After approval, the disc is duplicated to your desired quantity. Turn-around times average ten days for production discs and three for check discs. Of course, all the facilities will do rush jobs on mastering and check discs for a premium.

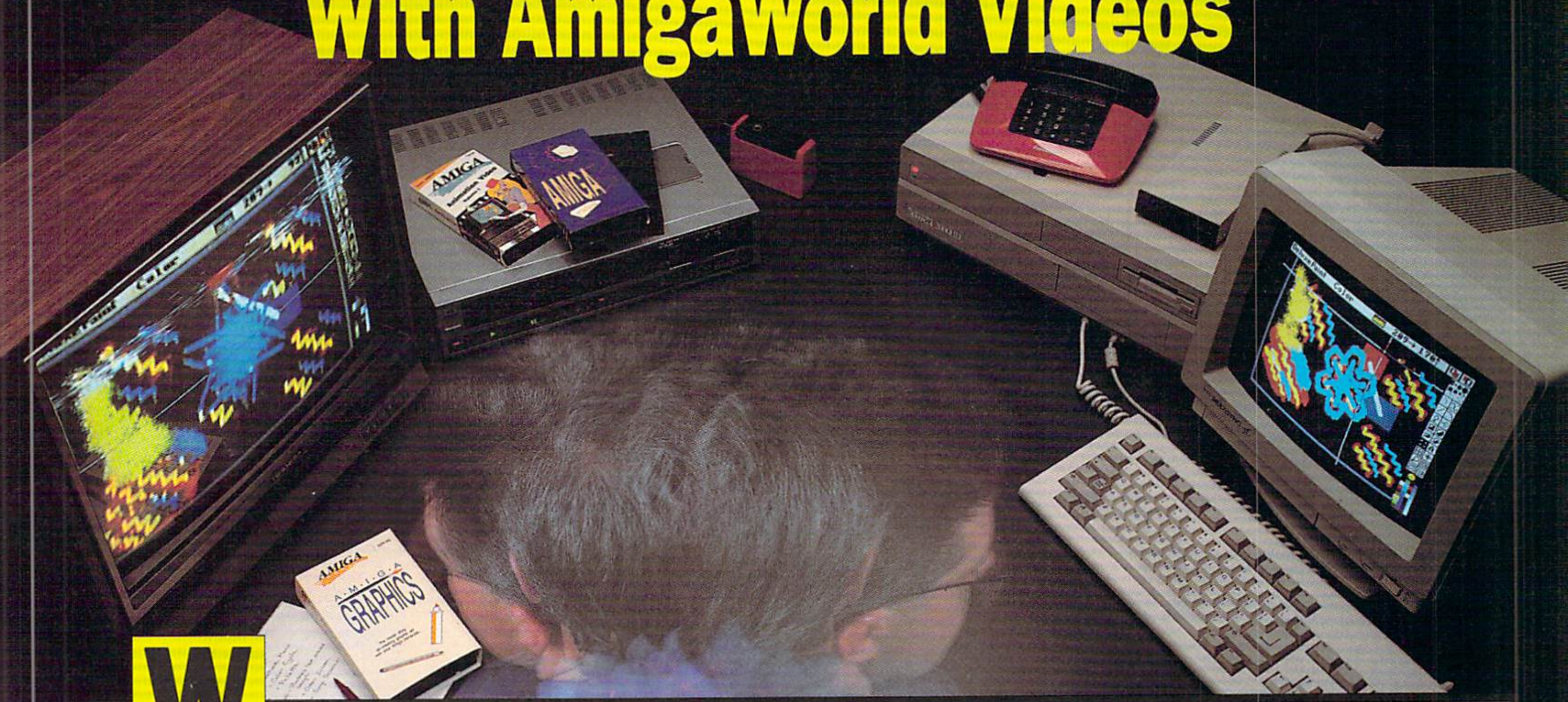
For a quick, low-budget solution, the Optical Disc Corporation and its affiliated RLV Recording Centers can produce one-shot, DRAW (Direct Read After Write) discs in two to three days at $250 (plastic) and $550 (glass) per copy from most popular formats. As these DRAW discs are stamped in a self-contained machine rather than pressed from a master in a factory, ODC can keep costs down. For more information on the affliliate nearest you, contact ODC at 12150 Mora Dr., Santa Fe Springs, CA 90670, 800/350-3500.

The accompanying chart lets you compare costs for a traditionally mastered, single-sided, CAV Level III disc. Call the manufacturers directly for prices on double-sided discs, other levels or sizes, and specialized services. ■

Gene Brawn is an interactive multimedia producer with several video discs to his credit. Write to him c/o AmigaWorld *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*



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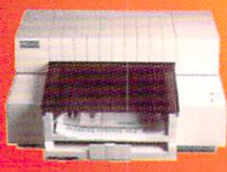
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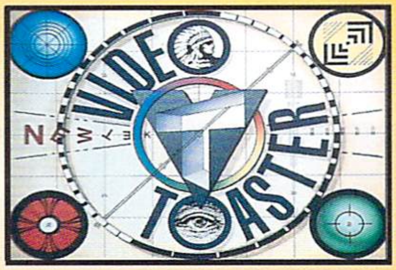
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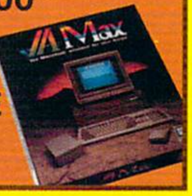
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WINGS

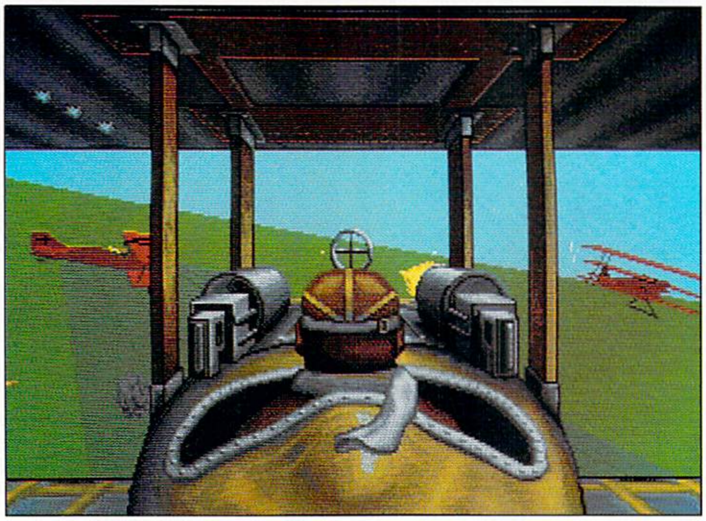
By Peter Olafson

Cinemaware's best game yet, Wings casts you as a World War I fighter pilot. The centerpiece of this quasi-role-playing adventure is a three-dimensional environment, seen from just behind the pilot, in which dogfights and ballon-busting missions are played out. You cruise, dive, and stall above the low hills and plains of the French countryside looking for red silhouettes on the horizon.

The cinematic perspective lives on in scene cuts. Sometimes that means a rear shot—a mini-game in which you have to shake a German ace off your tail. If you collide with another plane in mid-air, the view shifts to an exterior shot of the two of you going down, then switches back to the cockpit to give you a chance to pull out.

I could go on and on about damage, changing light conditions, and anti-aircraft fire. This part of Wings is essentially a versatile, action-filled flight simulator, with none of the burdensome learning curve of other simulators. Flying by joystick and pure instinct is hard to resist, especially with 240 missions.

Lots of amenities attend Wings. It installs on and plays from hard disk. The sound effects are solid, the music is somber, and the writing (in the form of a squadron log) is alternately thoughtful and gung-ho corny.



Fire or be fired upon.

The arcade sequences for bombing (from an overhead perspective) and strafing (from the perspective of a spotter plane above and to the far left and rear of your plane) are professional and polished. They could easily stand alone as arcade games in their own right. Wings might have been even better, however, had these sequences been incorporated into the 3-D mode. While perfectly pleasant in themselves, they're far removed from the feel and mind-set of the dogfighting—you can't be killed in them, for instance—and I sometimes felt as though I were playing three different games.

Wings is also missing the true computer role-playing that would give it more replay value. While you set four critical stats for your pilot, which improve and decline according to mission performance, the game is utterly linear. Regardless of how well you do, you're assigned the same missions in the same order, with no discernible branches in the story. The only variation comes when you do well (winning promotions and medals) or foul up (a dishonorable discharge or a free pine box).

Be aware, too, that the saved-game feature isn't much of a parachute. If you die on a mission, your saved character is erased, and you'll need to regularly back up the pilot.dat file on Reel 2. It's worth it to do so, I promise. Wings' strong points make it an essential purchase. *($49.95, Cinemaware, distributed by Electronic Arts, 1820 Gateway Dr., San Mateo, CA 92109, 415/571-7171. One megabyte and joystick required.)* ►

Crib Notes

By Peter Olafson

SO MANY QUESTIONS, and so little space . . .

• Some folks are stuck in the Mem Santi Temple maze in *Keef the Thief* (Electronic Arts, $49.95), and I can see why. This is not a conventional labyrinth; the passages descend and climb, so when you think you're back where you started, you're actually immediately above it or below it. Add the teleports and secret and one-way doors, and you have a proper mess. Map it first without entering the doors.

• Pascal Pilon of Charlemagne, Quebec, is having a time getting past the purple tentacle guarding the laboratory in *Maniac Mansion* (Lucasfilm, $44.95). The solution could vary a bit depending on the way you've played the game. If the Meteor Police have appeared, check out the dungeon floor for a useful item. (First there's the matter of the dungeon door combination. You'll need to wait until Dr. Fred gets in a playful mood, and then check the results.) Another item that might be useful is the contract—provided it has been edited correctly.

• Questions have been coming in, slowly but consistently, about how to deal with the elf girl by the stream in *Journey* (Infocom, $29.95). You should know a few Elvish words by now, and a couple of them happen to be the right ones. Use your connections; you have a friend whose name she might recognize. (After she cures Minar, however, don't immediately follow her off to elf-land. Praxix has found something interesting.)

• Jeremy Brown of Carmichael, CA, wonders if there's more to the insides of the giant robot Mog on planet Phleebut in *Space Quest III* (Sierra ►

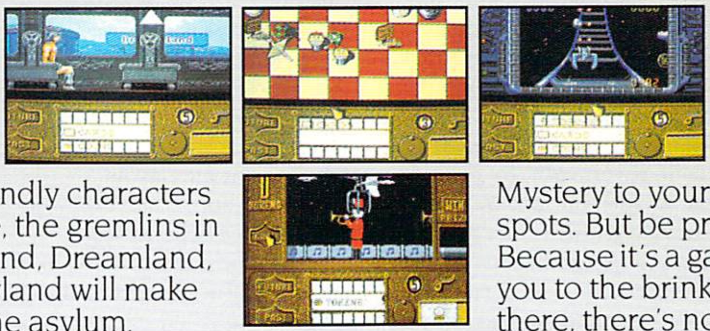
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Throughout the mystery, you'll also be tested by games of chance, like Bagatelle and the Grabber. Each of these ancient gambling devices will force you to execute supreme strategy. Of course, if you fail to locate secret keys, spare parts for rides and supernatural potions which are hidden throughout the park, all the luck in the world won't save you.

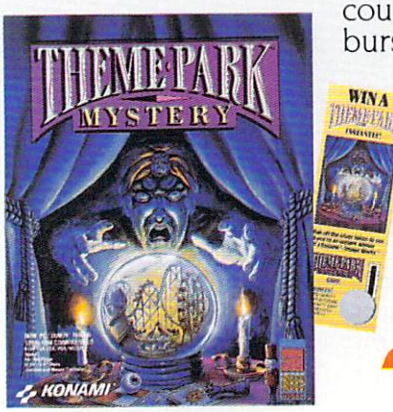
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The Killing Game Show

By Graham Kinsey

In the Killing Game Show (KGS), you are a criminal that's forced to entertain a TV audience by trying to climb out of eight Pits of Death (each containing two parts).

The pits are filled with HALFs (Hostile Artificial Life Forms) and all sorts of nasty traps and puzzles. If you try to pace yourself through the obstacles, you'll not last long, because each pit also contains an ever-rising amount of DOLL (Deadly to Organic Life Liquid) that forces you to think and act fast! You can collect numerous tools and weapons along the way to use against the HALFs. Each weapon and some of the tools have a plentiful supply of ammo/charges, but you can use and carry only one of each at a time.



If the HALFs don't get you, the DOLL will.

In KGS, you get five lives plus the use of an innovative Replay feature. Each time you die, the next life starts with a replay of everything you did in the last attempt, and you may take control at any point along the replay. This makes it much easier to complete the more difficult pits.

The game's presentation continues the Psygnosis tradition. The main soundtrack is outstanding, featuring many human voice samples (including one from a former president). During the game, you may choose to hear either sound effects or a soundtrack, but not both. The opening animation sequences are nicely done, but you can bypass them, if you wish, by pressing the joystick button. In addition, Psygnosis is finally starting to support various Amiga configurations. KGS runs fine on accelerated Amigas, and it even supports a second drive.

The only major complaint I have is that it lacks a password system that would allow you to skip previously completed pits. While you can press the appropriate function key to skip finished pits during game play, your progress is not saved when you quit the game. No thanks to the manual, I also discovered that pressing the Help key shows you a rough preview of a pit's layout.

You will appreciate every bit of assistance. The Killing Game Show is a well-done arcade/platform game that challenges even jaded game jocks. *($44.99, Psygnosis, 29 Saint Mary's Court, Brookline, MA 02146, 617/731-3553. Joystick required.)*

The Immortal

By Peter Olafson

It's hard to know where to begin a review of the exquisite dungeon adventure, The Immortal. I could start with the graphics: three dimensions in exacting detail, right down to the rivets in the doors and the taut muscles in a goblin's shoulders. The maze under the ruined city of Erinoch has a vivid and lively existence, and your Amiga seems like a window overlooking it.

Where would the graphics be, however, without the animation? Never have I seen computer-game torches and candles flicker with such realism, spells explode in such soft fireworks, or characters go down with pain so etched on their faces. All this is complemented by some of the most beautiful music ever heard in a computer game.

Then again, maybe the

Continued on p. 84.

On-Line, $59.95). The ropes on the second level aren't for climbing, Jeremy. They're one of at least three ways to knock off the assassin who's tracking you. Because you already did that elsewhere, Mog is just for color; move on to the burger joint. (Or you may want to restore and experiment with the other deaths.)

• You can wipe out Electronic Arts' corporate headquarters in *F/A-18 Interceptor* (Electronic Arts, $19.95). ("Another IBM port? Here's a Sidewinder in your office window, Trip Hawkins!") It's the northern of the twin buildings west of the San Mateo Bridge.

• A rare question on *The Bard's Tale I* (Electronic Arts, $19.95): Shawn Taggart of El Toro, CA, asks the meaning of the magic mouth in Kylearan's Tower that requests "the one of cold, foretold twofold." Oh, all right. It's "stone golem." Remember, Shawn: Map every square in every dungeon, and write down everything you hear. In addition, you'll need to have explored Skara Brae to answer the riddle coming up.

• Everybody seems to want to know what to do after they've liberated the remote control and magnetic card from the drunk monk in *Future Wars* (Interplay, $49.95). Well, the options are pretty limited, and one spot in the monastery begs for further exploration. Have you ever seen a computer-game wine cellar that *didn't* have a secret door?

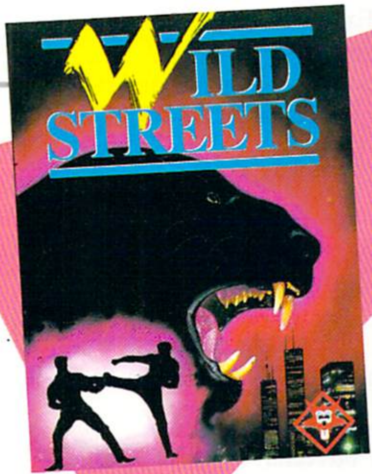
Tom Smith II of Poland, OH, can't even get his foot in the front door before monks in the lobby are all over him. Well, Tom, I suspect you're getting ahead of yourself. Notice how the monks all look and behave the same way, and become enraged at anyone who doesn't. Someone trying to sneak in might want to imitate them in order to be inconspicuous. You've taken a good first step by visiting the castle. The lord's at the mall or something, so talk to the guard and show off the pendant you've found. Also, explore the area behind the castle. Looks like a monk's robe up in that tree, doesn't it? That should get you started.

Continued on p. 84.

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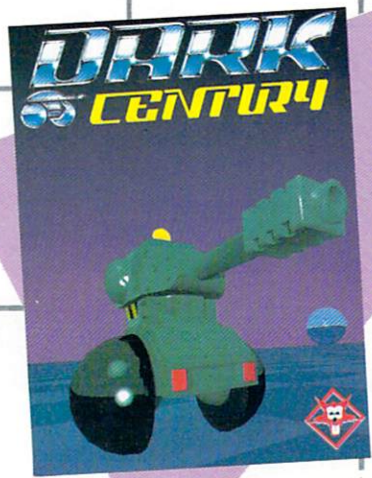


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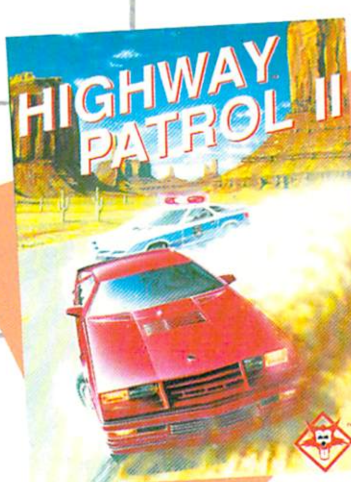


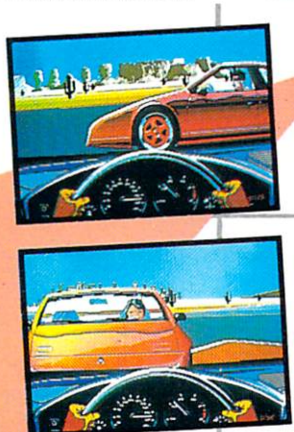
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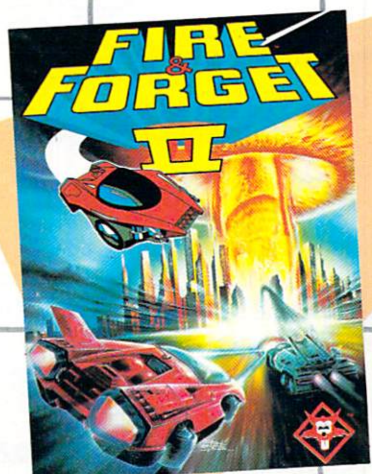




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VIDEO



Video Toaster from NewTek

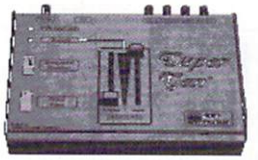
Tired of knowing more about Amiga video than the people you buy it from? It's not a comforting feeling. The technology is expanding so rapidly it's hard to keep up. So we've brought in some video experts. They can help you make the right selections and since all we sell has been pretested, your purchase arrives ready to run.

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GENLOCKS



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The **SuperGen 2000s** is one of the best you can buy. It achieves the highest quality results and if your production needs warrant it, call for details. Briwall warranty is 180 days. **Price $1,549.**

SOFTWARE

Productivity

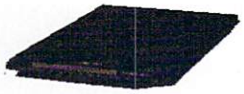
Even choosing the software you need is difficult these days. Memory requirements, operating system compatibility, and version changes can confuse your purchase decision. We help you sort out the issues, and we help you get your purchase installed and working when your order arrives. Just call our toll-free tech line if you have any problems. As always, if it's not quite right, send it back.

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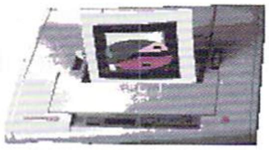
Sharp JX100 and ScanLab 100

Desktop publishing is an art form. And getting the right picture placed perfectly into your publication is an exacting talent. Make it easier by getting the scanner that makes sense for you. And you can count on us to help you get it up and running.

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PRINTERS



Diconix from Kodak

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Like the new **Diconix Color 4** inkjet printer from Kodak. It produces beautiful results! And it uses plain paper to do it. Using the black, magenta, cyan, and yellow four-color approach with a resolution of up to 192 by 192 dots per inch the results are stunning. It handles cut-sheet or tractor-feed, prints on transparencies, uses non-smearing ink, and is surprisingly quiet. It's HP PaintJet compatible. From Briwall the warranty is 2 years. **Price $1149.**

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Quantum ProDrive 105 meg

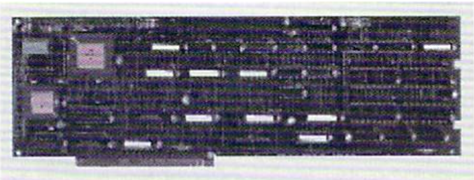
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ACCELERATORS



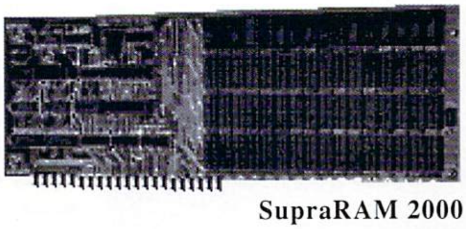
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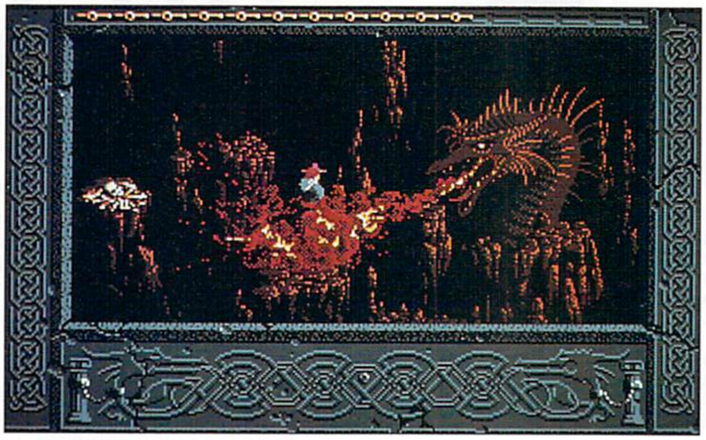
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game play deserves top billing. You use your joystick to direct a bearded fellow with a staff through eight levels of interlocking puzzles and brawls in his search for his wizard mentor. Combat can take some getting used to—in this 3-D world, your character may be facing you as he fights—but you'll often find creative ways to use your inventory. The bank-camera perspective and smooth, multi-directional scrolling will put you in mind of The Faery Tale Adventure. Unlike that classic game, however, this is not a real role-playing game; character enhancement seems to be mostly a happy accident.

The game is actually fairly small as dungeon games go—only 50+ rooms. Don't be fooled, though; it's hard. You will die regularly. Mercifully, the manual doubles as hint book, with a walk-through of Level 1 and tips on six of the other seven.



Decipher puzzles and mazes to save the wizard.

The Immortal has a few infirmities. It takes ages to load its two disks. The music, while lovely, almost drowns out the sound effects. (At least you can turn it off.) Also, there's no retreat once combat is under way—not too realistic, guys—and every fight is to the death.

Although the old kill-the-dragon-save-the-wizard theme was growing fungus two years ago, The Immortal is so vibrant it makes the genre feel new. Go out and get this one now. *($49.95, Electronic Arts, 1820 Gateway Dr., San Mateo, CA 92109, 415/571-7171. One megabyte and joystick required.)*

Power Pinball

By Graham Kinsey

Pinball addicts rejoice; Power Pinball is here. With it, you can play several ready-made pinball machines, modify them, or build your own from scratch.

To create your own, design the walls in the wireframe editing mode, add bumpers from the parts screen, and edit the shapes of existing bumpers. With the parts assembled, you add graphics to your machine from a paint program. You can change not only the background image, but also the wall, bumper, scoreboard, and title-area images. For sounds, you can assign digitized effects to each bumper, special events, and such standard occurrances as the ball falling between the flippers to the out hole.



Build your own pinball heaven.

Pinball machines aren't much fun unless they're complex. Power Pinball lets you implement drop targets, spinners, rollovers, holes (which capture the ball and shoot it back in a different direction), and one-way gates. You then assign each bumper to an ►

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Future Wars is proving a short game for Steve Preston of Richlandtown, PA, who can't get past the map in the office at the start. Steve has the right idea about using the little flag on the map, but he may want to look closely at the map first, and remember that objects are often tiny.

• Some people report trouble getting into the final castle (the desert pyramid) in *Drakkhen* (Draconian, $59.95) even though they've done everything correctly up to that point. It's really a simple problem. Just try coming from a different direction.

A different class of Drakkhen questions comes from people who've left the pyramid and are wondering what to do with their lives. You're just about done. Be sure you've read all four passages in castles of the four elements. (If you don't know what I mean, then you're not ready. Even if you do know, you may have missed one. It's well hidden.)

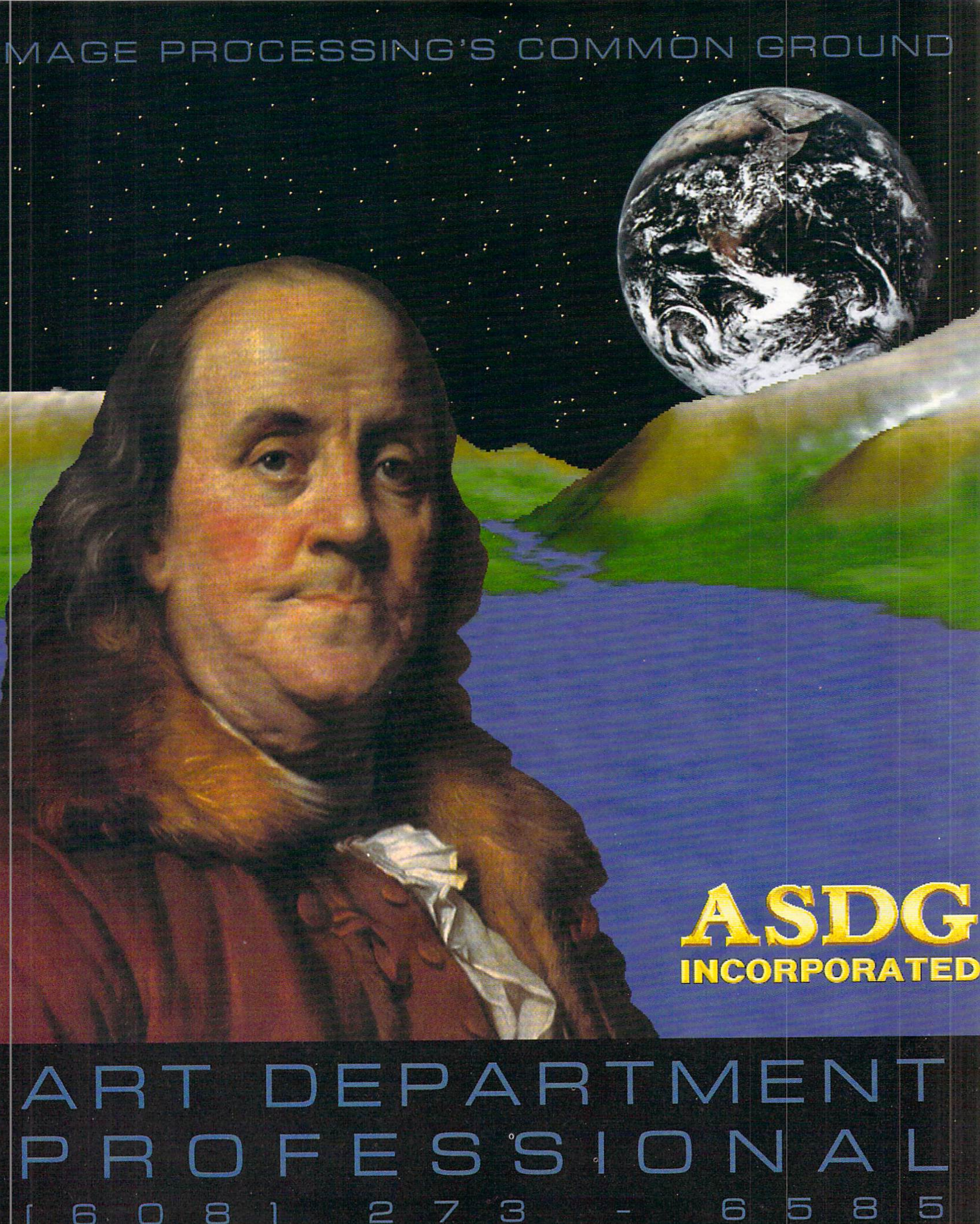
David Norton of Redding, CA, may be ready for the final plunge. He's been instructed to meet a dragon lord in a "blind alley," but he's uncertain where to go. Don't bother looking in the castles, Dave. Do you recall seeing anything that looked remotely like an alley (or path)?

A couple of other Drakkhen items...For David McLeod of New York: The ring that leads you to the Princess of Air's castle isn't a "takeable" item. If you've been offered it, you already have it, and it will work without being invoked. Have you noticed the arrows on the ground that mark the roads leading away from the castles? See anything similar?

Eric Bezanson of Prior Lake, MN, is a bit off track. You can't enter the Princess of Earth's castle; it's just a static graphic. The castle you want is *directly* east of the Prince's. Make a detour north or south around the firestones and get back on the road again.

• I'd hoped to tackle a backlog of *Dungeon Master* (FTL, $39.95) mail this time, but I have room for only the promised solution to a common problem down on Level 5. Last time we

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event (up to a total of 99). Once the bumper is activated, you can instruct the program to add points to the main score or the bonus score, add to the bonus multiplier, award an extra ball or free game, send the ball directly to the out hole, or even randomly trigger one of several designated rewards.

The Options screen allows you to set other variables, such as the machine's play speed and gravity, the color of the flippers, the number of balls per game, and Tommy Mode (which allows you to emulate Tommy the Pinball Wizard by turning off the display so you can't see the machine). Those who long for a true-to-life feel in a computer pinball game will love the Shake option. Don't "push" the machine too hard to the left or right; Power Pinball has a Tilt mode, too!

Version 1.02 of Power Pinball is fairly stable, but not perfect (especially with accelerated Amigas). You can sometimes freeze the machine by using the Shaking feature and hitting the flippers at the same time, so be careful. Power Pinball's biggest problem is what it doesn't do. The game's logic portion is rather crude, making it hard to add complexity when programming your own machines. Nor does Power Pinball support some basic options such as multiple-ball play and more than two flippers in a machine.

The developer is committed to improving the game, however, and is already working on version 2.0. Until its release, you'll have plenty of fun with Power Pinball. . . just don't shake the machine too much. *($39.95, KarmaSoft, PO Box 1034, Golden, CO 80402, 303/277-1241. 1 MB of RAM recommended.)*

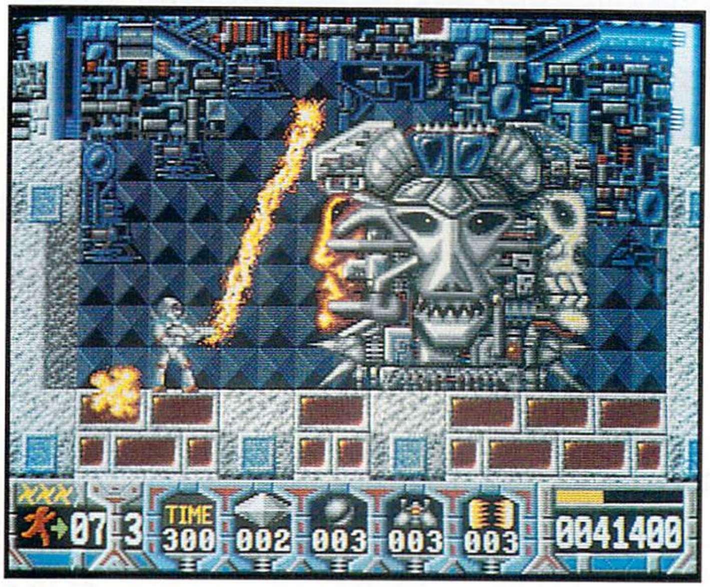
TURRICAN

By Peter Olafson

A vast, futuristic arcade adventure, Turrican has almost everything fans of the genre could want, and a few things they might not even expect. You pilot a silver-armored sprite-killer through five worlds (each with two or three large sub-levels) in search of the three-headed Morgul, whom the docs identify as the source of all mankind's nightmares.

Turrican is the Pentagon of platform games; the levels, delightfully, seem to go on forever, and they're not as omnidirectional as in some games. There are little side trips to make into bat-filled caves, up stairways to the sky, dead ends that turn out not to be dead ends and dead ends that do. There are hidden extra lives and boxes—invisible until shot—that hold huge supplies of potent weapons. I can't wait to go back and see what I missed. Said levels are rendered in an array of hard, handsome colors, but with subtlety. (As you descend into the many canyons, the sky grows progressively darker.) By the end of your war with World One, you'll be having trouble finding your way out.

Along the way, you're menaced by everything from stumpy robots and bazooka-wielding fat boys to lightning bolts and mashing metallic fists. All are desperate to rub up against you and run down your poor little supply of life. On your side are the usual variety of weapons—with some clever methods for extending ►



As the enemy gets bigger, your aim better get better.

their range—and the ability to turn into a gyroscope, which looked more like a buzzsaw blade to me. If you have a two-button joystick, you'll find it is supported as well.

On the down side, the Continue option is a real dog for a game this big. In arcade terms, a "continue" is the ability to resume play where you left off in your last game. In Turrican, it seems to mean you restart from scratch—which you could have done anyway. Perhaps you have to complete a full world first. If so, that's tough. This one's not that easy.

Nevertheless, pick this one up pronto. Turrican is one of the year's essential arcade games. *($39.95, Innerprise, 128 Cockeysville Rd., Hunt Valley, MD 21030, 301/785-2266. No special requirements.)*

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dealt with the three puzzle rooms off the main corridor at the start of the level. The trouble begins two doors later in the little maze on the hall's right branch. You'll quickly find a switch at the top of the maze that opens a secret room at the bottom, but how to keep it open? Find the *other* secret room, with two switches of its own. It's in the lower left-hand corner.

If you need help with a game, you can reach me by mail at 12 W. 104th St., Apt. 3E, New York, NY 10025 (send a SASE if you want a personal reply) and by E-mail on GEnie as P.OLAFSON and on P/Link as Peteroo.

COMPANIES MENTIONED:

Draconian, distributed by Data East, 1850 Little Orchard St., San Jose, CA 95125, 408/286-7074.

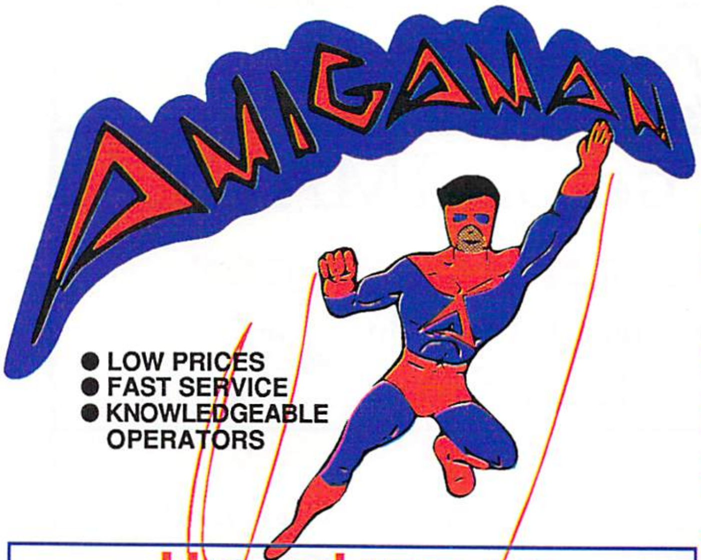
Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171.

FTL Games, 6160 Lusk Blvd., C-206, San Diego, CA 92121, 619/453-5711.

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Lucasfilm, distributed by Electronic Arts.

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From p. 24.
ceive data from contributors using other computers.

FONTS FOR SCALE

Previous versions of PageStream utilized Soft-Logik's own scalable-font scheme, which created very nice printed output, but produced on-screen representations that were often crude and inaccurate, detracting seriously from PageStream's otherwise excellent WYSIWYG operating environment. Some of the program's critics further complained that these fonts were unprofessional in appearance and did not render well in the smaller point sizes.

With version 2.0 of PageStream, Soft-Logik has alleviated the on-screen problem by rendering text in the smaller point sizes directly from font outlines used for printed output, where the adjusted screen height convention helps compensate for the coarseness of smaller point sizes in the cruder screen bitmap system. The outline-rendering approach is slow, however, as it requires a great deal of computational time.

As a compromise, Soft-Logik combined the older scalable system with the outline approach in order to shorten rendering time. High-quality, on-screen rendering is most important when you zoom in on text to position objects or fine-tune your layout. While the combination of methods is a valid compromise, there are times when I would like my fonts drawn on-screen in the highest possible quality—regardless of the speed penalty. Conversely, there are other times when I would sacrifice on-screen quality for speed.

Perhaps Soft-Logik could provide a solution to this conflict by adding an adjustable, outline/nonoutline, on-screen height threshold, similar to the way the program lets you determine on-screen greeking (the substituting of facsimile text—often merely a gray bar or line—for actual text when you are working below a certain point size).

To address font-scaling shortcomings, Soft-Logik licensed AFGA, Compugraphic's highly-regarded font-scaling system (also available with Professional Page), for use alongside the company's own. In addition, Soft-Logik added support for Adobe Type 1 PostScript fonts, regardless of whether you own a PostScript ►

PageStream vs. Other DTP Programs (All Platforms)

PROGRAM	Page Maker 3.01	Page Maker 4	Quark-XPress 3	Page Stream 2.0	Pro Page 1.3
PLATFORM	Mac/PC	Mac/PC	Mac	Amiga	Amiga
LAYOUT					
Group Objects			•	•	•
Align Objects			•	•	•
Multipage Spreads	•	•	•		
L/R Master Pages			•	•	•
Rotate Graphics			.001°	1°	
Rotate Text		90° only	1°	1°	
Flow Around Graphics	•	•	•	•	•
Lock Graphic to Text		•	•	•	
Lock Graphic to Position		•	•	•	•
Step and Repeat		•	•	•	
TYPOGRAPHY					
Point Sizes	4–127	4–650	2–720	.5–1310	4–127
Point Increments	.5	.1	.001	.001	1
Kern Increments		.01 em	.001 em	.001 em	*
Shift Baseline			•	•	•
Edit Kern			•	•	
Expand/Condense Type		•	•	•	
INTERFACE					
Open Multiple Files			•	•	
Pasteboard	•	•	•	•	•
Manually Place Coord's			•	•	•
View 50%	•	•	•	•	•
View 200%	•	•	•	•	•
Zoom View			•	•	•
View Facing Pages	•	•	•	•	
DOCUMENT EDITING					
Chapter Incl. to Book		•			
Table of Contents		•			
Indexing		•			
Spell Checking		•	•	•	
Search/Replace		•	•	•	•
S/R Font Attributes		•	•	•	•
Text Mode Edit		•			**
Maximum Pages	128	999	999	999	1000
Widow/Orphan Control		•	•		
IMPORT CAPABILITIES					
WordPerfect	•	•	•	•	•
Microsoft Word	•	•	•		
ProWrite				•	
EPS	•	•	•	•	•
TIFF	•	•	•	•	
MacPaint	•	•	•	•	
IFF/ILBM				•	•

• = Feature or function is available within the program.

NOTES

* Tracking however to .01 em.

** Available in concert with Transcript.

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printer or not. This means that with PageStream 2.0, Amiga desktop publishers can utilize the best of what these three scalable-font technologies have to offer. (If you wish, you can combine all three in the same document.) There are hundreds of Compugraphic and Adobe Type 1 typefaces available.

While PageStream's last release (version 1.8) proved to be more of a maintenance upgrade, PageStream 2.0 is clearly a feature-intensive offering. A couple of new problems, however, have crept into the blend. A particularly nagging one involves a false, intermittent "out-of-memory" error message when changing view modes. Although this pseudo error will not crash your system or wipe out data, you must force PageStream to redraw the screen in order to view your image again. Another problem is that while PageStream's tag operations work properly in object mode, when applied to text mode, they have a tendency to act upon entire units (blocks, articles, or documents) rather than only upon tagged items.

Although you can use PageStream's macros to automate almost any repetitive action, their usefulness is hampered by inadequate documentation. While much improved over that of the previous version, the manual devotes only two pages to explaining macros. Also, you are limited to having only ten active macros at a time, with each one linked to a function key. You can load a new set of ten macros at any time, however, so I was easily able to make PageStream imitate the command-function keys of WordPerfect 4.1.

In closing, I believe that PageStream 2.0's powerful labor-saving features, advanced font- and graphic-handling capabilities, and its well-designed user interface make it the new Amiga desktop publishing king of the hill.

YOUR TURN!

I have to say that I liked PageStream when it was first released. The current version is fantastic; there are a lot more features, and it's more intuitive. I really like the structured drawing tools and the features that rotate and skew text and graphics. The dictionary is a little slow when compared to those of word processors, but it works fine for the kinds of things we do.

Dennis McNown
Catonsville, MD

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Soft-Logik
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GOLD DISK OFFICE

The whole enchilada.

By Irene C. Kobelski

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Continued on p. 98.

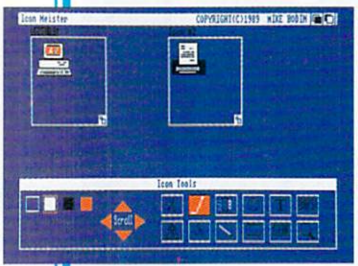


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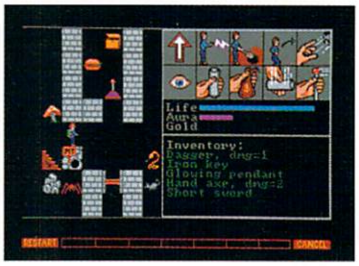


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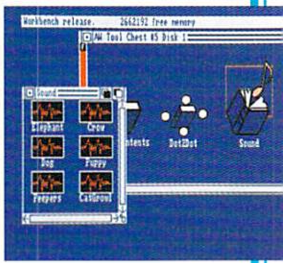
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From p. 94.

ble ideas software developers have come up with is the integrated package: You can get everything you need all in one fell swoop.

Let's take a tour through Gold Disk Office, a package of five separate and powerful business programs that are as easy to use as they are to buy.

WRITE ON!

The package's multifeatured word processor, *Office Write*, goes beyond the basics. It allows you to create indexes, define macros, and place "bookmarks" within a document. You can convert individual letters or even entire words to upper- or lowercase simply by highlighting the text and either executing the command from the keyboard or selecting it from the menu. In fact, all of Write's menu commands are fully accessible from the keyboard or via the mouse—now *that's* flexibility.

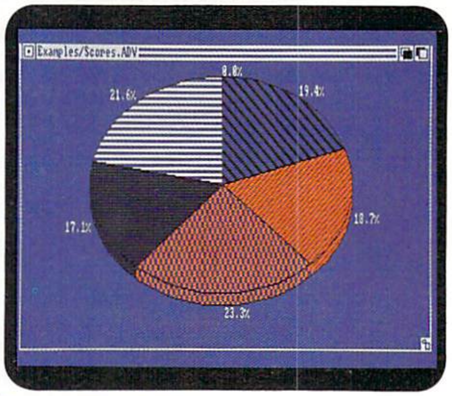
With single-keystroke operations, you can also manage multiple windows simply and effectively, allowing you to select different page and text colors to keep documents separate. Furthermore, you can assign icons to windows to make them easier to identify. Office Write even comes with a built-in spelling checker to guard against embarrassing errors.

Although well designed, Write does have a few shortcomings. It provides no on-screen margins or page indicators and displays auto-hyphens only in preview mode. These omissions make formatting complex documents difficult. In addition, scrolling (controlled by a single gadget at the bottom of the screen) occurs in a way that makes it difficult to keep track of the cursor. These complaints are minor, however, in view of the extra features the program does provide.

The layout program, *Office Page*, enables you to create professional-quality newsletters, brochures, and ad designs with relative ease. The program allows you to select a standard or interlaced work screen, as well as to choose from a variety of layout tools such as grids, rulers, and columns. Any page can be viewed at magnifications up to 200 percent.

Page's own WYSIWYG word processor is best suited for creating short blocks of text or for making quick changes. Because of the delays caused by screen refreshes and font caching, long documents should instead be prepared with Office Write. By running Write simultaneously, you can edit existing blocks of text via a pop-up window.

Page displays text in a variety of fonts, sizes, and styles, and allows you to combine results within any box to achieve impressive effects. You can also incorporate graphics into your text. In addition



Have a slice of 3-D pie.

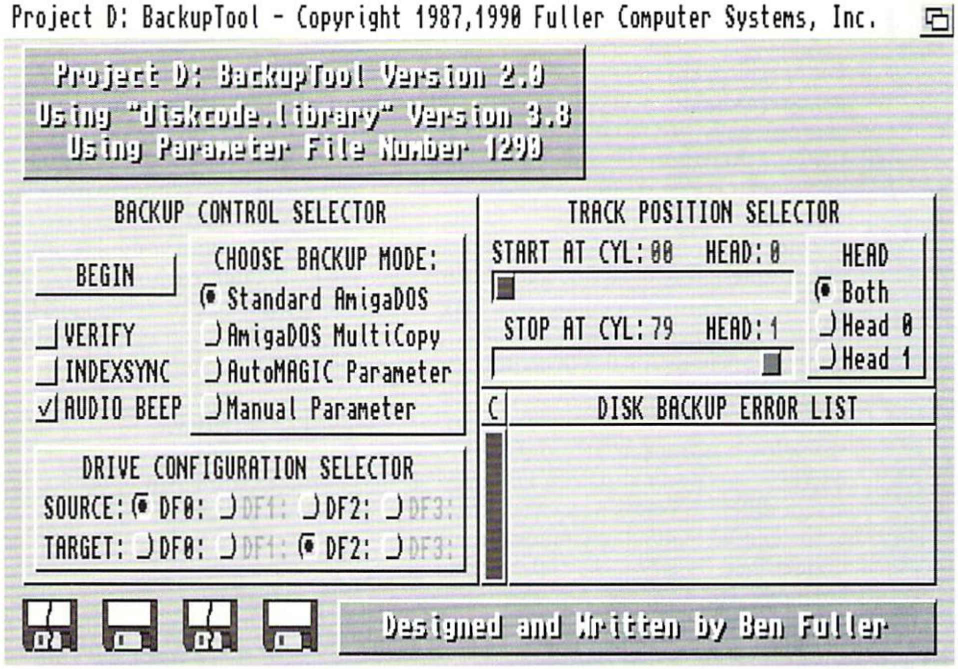
to letting you import bitmap graphics and Professional Draw clips, the program provides tools for creating structured graphics. Text may also be wrapped around any graphic without overlapping. Page supports both dot-matrix and PostScript printers and is capable of some impressive output.

Creating a flat-file database with *Office File* is as simple as designing a template and then adding data. You can easily manipulate records with indexes, filters, sets, and reports of your own design. Special Office File features worth noting include QuickCalc, which performs statistical calculations on a numeric field in a range of records; Formula Substitution, which changes the fields in multiple records based on a calculated mathematical expression; and Built-In Functions, which provides prewritten expressions for filters, searches, and formula substitutions. File also supports ARexx.

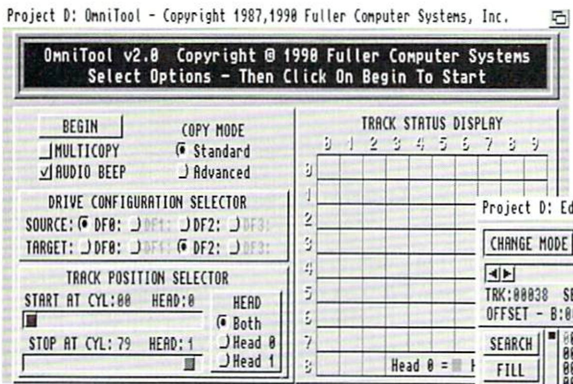
You can use files created in other Office modules—including Write, Calc (spreadsheet), and Graph (chart generation)—with database files you create with Office File, making it a very useful tool.

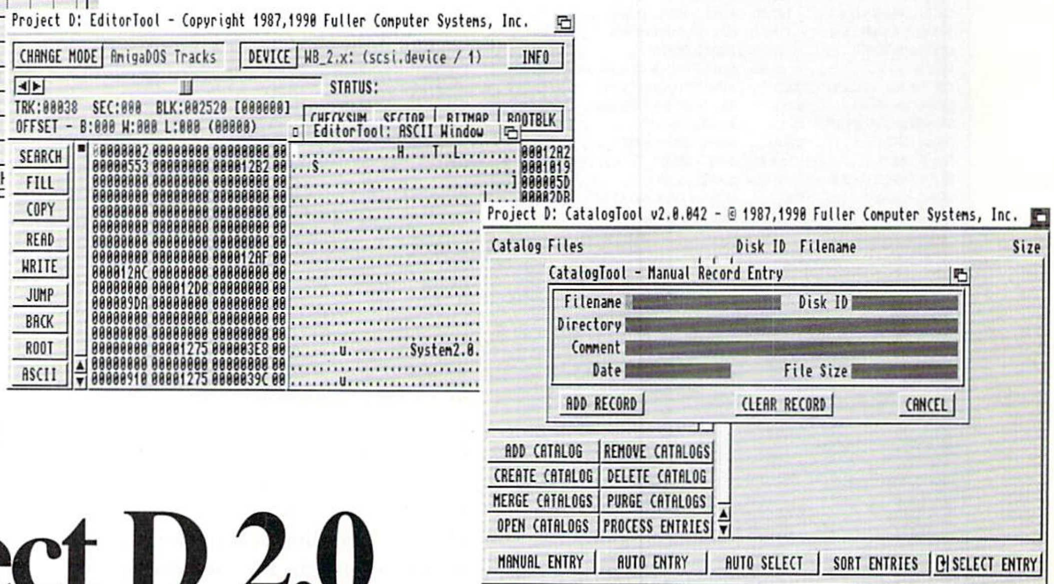
ROUNDING UP THE FIGURES

Office Calc, the spreadsheet program, records your home or business finances. ►



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For specific tasks such as taxes or mortgage repayments, you can use the professionally prepared spreadsheet templates included on the distribution disk, or you can create customized versions to suit your own needs.

To eliminate repetitive keystrokes, Calc lets you design macros for, and attach ARexx scripts to, individual cells. Like Office File, Calc provides a series of built-in functions for use in writing expressions.

To improve the appearance of your spreadsheets, you can manipulate cell widths, align decimal points, and even assign different colors and styles within your text. These text attributes can also be modified based on the results of calculations. For example, if you are working on a profit-and-loss statement, you can enter a formula that will display all negative numbers (losses) in red and all positive numbers (profits) in black.

Calc is not confined to using data created in Office programs; it also allows you to load Lotus and MaxiPlan files (with some limitations) and to export Lotus files. You can also use Calc with Write (to edit/read cells or add notations), Page (to include actual spreadsheet values as rows or columns in your publications), and Graph (to generate charts and graphs).

If you intend to make a business presentation or would like visually appealing reports, *Office Graph*'s charts and graphs do the job nicely. The program opens to a spreadsheet window you can use to arrange your data in rows and columns. Although identical to Office Calc in appearance, the Graph spreadsheet is unable to recalculate the values in the cells according to formulas. You may enter data directly or import figures from Calc. After doing so, choose which data you wish to plot and the type of chart or graph you wish to use. There are ten choices, including 3-D pie and bar, some of which you can fine-tune for special display. For example, using the "all exploding" command separates the individual slices in a pie graph.

For superior printed output of your work, you can import files from Graph into the Office Page layout program. You can save Graph files as bitmap graphics (IFF) or as Professional Draw clips, but, as bitmap graphics often appear jagged when printed, you would probably find that the latter option is preferable.

Gold Disk seems to have put a lot of thought into this package. By going the extra mile, the company has created a comfortable working environment for both mouse and keyboard users. Office's well-written tutorials guide you effortlessly through each program. While those with a 512K system are limited to running the programs separately, Gold Disk Office is still a bargain.

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Top Form

It's just a formality.

By Morton A. Kevelson

THE FILL-IN form has become an essential part of Western civilization. Between bank slips, credit card forms, and the like, rarely does a day go by that you don't use a form. If you are engaged in any type of interactive commerce, the chances are that you will occasionally need to inflict forms of your own upon others. Top Form, from Designing Minds, is a general-purpose, forms-creation program you can use to generate custom forms.

Images with Character

Top Form's working page is a blank screen with an array of icons along the left side that make up the control panel. You can access many of the control-panel functions from both pull-down menus and keystroke combinations.

Although Top Form has a number of tools for drawing lines, boxes and grids, the program is actually character-based. All its graphics are printed using the block graphic characters that are a part of most printers' character sets. If your printer does not have in ROM the dozen graphics characters that Top Form re- ►

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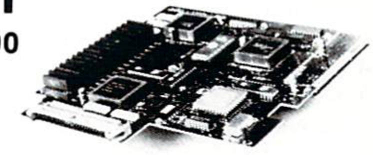
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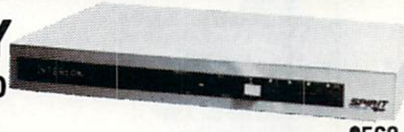
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Circle 19 on Reader Service card.

quires, you must download them into the printer's RAM as custom characters. You are not likely to have to do this, however, as these characters are standard on all printers that offer Epson or IBM emulation. Nevertheless, the Top Form disk provides eight downloadable fonts that cover 75% of the printers on the market.

Because the Workbench printer drivers do not provide the printer control that Top Form needs, the program comes with nearly two dozen of its own drivers. If you have an unsupported printer, you will have to create a driver. Top Form provides a driver-creation utility, which requires the appropriate ASCII control codes for your printer.

You can create forms of up to $8^{1}/_{2} \times 11$ inches, and a number of samples are included on the program disk. There is no provision for importing IFF graphics or incorporating color, and your forms are limited to just the one IBM-style font.

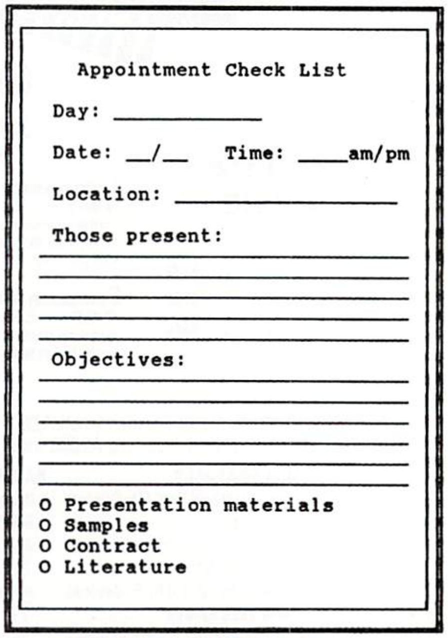
Get Your Fill

Although it is possible to fill out completed forms using Top Form, it is not a good idea. Top Form cannot distinguish fill-in data from the underlying structure of the form. It is entirely too easy to type the fill data over parts of the form and thereby obliterate the form itself. Filling out forms either by hand or by using Top Form's file-merge facility is a better approach. Top Form's Merge files are simply sequential files made up of structured blocks. You can easily create appropriate files to import and merge with these using a text editor or database program that supports ASCII. Unfortunately, I was unable to get Top Form's Merge feature to function; even the sample file on disk would not work.

Another quirk I encountered was Top Form's file requesters. Although they are standard in appearance, you cannot interrupt a requester until it has finished reading in the current directory. This can be annoying if you are working with a lot of small files on floppy disks. On the other hand, once a directory has been read in, Top Form retains it in a RAM buffer so that subsequent access to the file requester is instantaneous as long as the disk has not changed.

Text attributes such as italics, underline and bold are not visible on the working display. To see their effects, you must invoke a Preview mode, which displays the form in WYSIWYG (What You See Is What You Get) style but does not let you make any changes. Further, all of Top Form's layout operations, such as centering and justification, are based on a standard 80 characters per line. If you choose to use expanded or condensed print, both of which Top Form supports, these layout functions will not work.

Finally, when outputting Top Form files to my Panasonic KX-P1124 printer,


Appointment Check List
Day: ___________
Date: __/__ Time: ____am/pm
Location: ______________
Those present:
Objectives:
O Presentation materials
O Samples
O Contract
O Literature

A printout from one of Top Form's disk samples.

I found another problem. Draft-mode printing worked fine, but no matter what I did, I was unable to print more than a single form in near-letter-quality mode without restarting the program.

Top Form is little more than a single-page word processor. In fact, you can create forms just as effectively with any WYSIWYG word processor—such as Pen Pal or ProWrite—that allows you to draw lines. If you are looking for a dedicated forms-creation program, I suggest FormAtion (reviewed Feb. '90, p. 18); it does a lot more for less money.

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Continued on p. 106.

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From p. 102.

BACKTALK

CANDID RESPONSES TO *AMIGAWORLD* REVIEWS

The Doctor Is In

I am concerned about the negativity of your review of Dr. Ami.. (Free Spirit's disk and memory diagnostic and repair software), which ran in your November 1990 issue. So far, Dr. Ami.. has saved me twice.

The review seemed to compare Dr. Ami.. to Disksalv, a very useful but totally different piece of software. This is unfair, for Disksalv, like Diskdoctor and other disk utilities, does nothing to attempt repair of a damaged disk. These utilities only allow you to copy the data to another disk. This is great for diskettes, but a real pain with hard disks. Dr. Ami.. is one of the very few disk utilities that will go out and repair a hard drive with the data intact. (Dr. Ami runs fine with AmigaDOS 2.0 on my A3000.)

I have called Free Spirit's technical support and found them to be very helpful.

What really concerns me, and should concern others, is that if I did not already own and use Dr. Ami.., I certainly would not buy it after reading your review. The loss would have been mine.

John Rosner
Warrenton, VA

We wish to respond to an unfair "Your Turn" comment regarding our customer service in your review of Dr. Ami.. (Nov. '90, p. 104). Since our inception seven years ago, we have always made customer service a top priority. We respond to every customer inquiry. Requests for technical assistance are handled either by myself or a staff member (a former editor of Commodore Magazine). When necessary, we involve the individual programmer(s) in resolving a problem.

In the particular instance noted in "Your Turn," we spent a considerable amount of time with the customer trying to resolve the issue. He was trying to use Dr. Ami.. to diagnose board-level problems on the computers he was servicing. These were problems far beyond the capabilities of a software method of detection, and hence were an inappropriate application of the software.

We will continue to produce, support, and upgrade Dr. Ami.., because a large number of Amiga users have found it to be an indispensable tool.

Joseph R. Hubbard
President, Free Spirit Software ■


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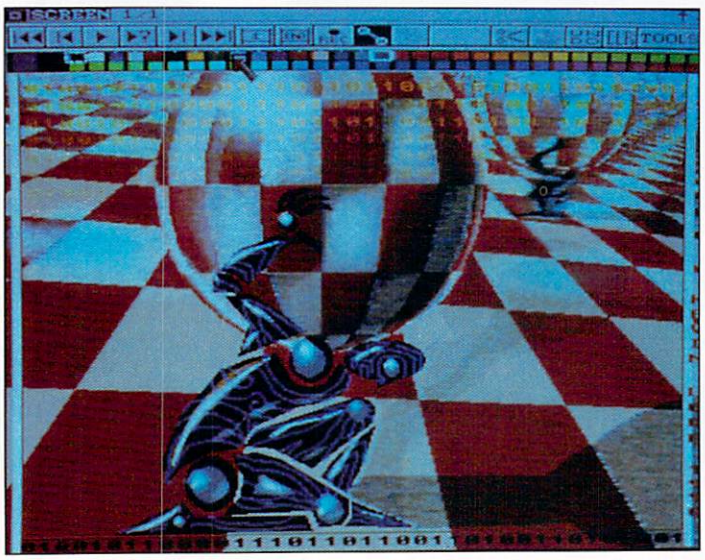
Compiled by John Wolfskill

HAM PAINTER

Aegis SpectraColor ($149.95) is a fourth-generation, 4096-color HAM paint and animation system for the Amiga. According to the company, the program is the first HAM paint program to support full animation of HAM-style ANIM brushes. Based on the company's popular Photon Paint, SpectraColor comes with a radically new user interface and proprietory color management that eliminates HAM color "fringing." The program also supports key-frame animation, provides brushes you can rotate to any angle, and enables you to flip on any axis, resize, bend, twist, or impart a special 3-D tilt effect. Brushes can be wrapped on cones, spheres, tubes, ellipses, boxes, or other custom shapes.

SpectraColor's Brush modes include blend, add, subtract, minimum, maximum, AND, OR, and XOR. The program also supports transparent brushes and 3-D extrusion by color value.

Another feature is Pantograph, a drawing tool that allows you to create art by tracing an on-screen object. Other standard features include brushes, erasers, fills, spray paint, lasso, marquee, straight lines, rectangles, ovals, and more. (Oxxi, 1339 E. 28th St., Long Beach, CA 90806, 213/427-1227.) *RS# 504.*



A HAM image created with Oxxi's SpectraColor.

VIDEO BLENDER DEBUTS

Progressive Peripherals & Software recently took the wraps off the **Video Blender**, ($1295) a video switching system that works with all Amigas. Designed with the video professional in mind, the Blender provides video switching, luma-keying, genlocking, localized screen-color generation in 16 million colors, and a host of video fades/wipes. It also includes a stereo sound mixer.

The Blender can mix and manipulate composite video, NTSC RGB (with external synchronization), and Amiga RGB video inputs. An internal color generator produces background screens with up to 16 million colors. External devices such as video cameras and 24-bit framebuffers can also be assigned (slaved) to the NTSC RGB video channel to produce special video effects. The Blender's internal circuitry is designed to synchronize multiple video inputs without time-base corrector hardware. In addition, you can synchronize the stereo audio channels with video.

The compact unit, controlled through the Amiga's serial port, allows you to mix 256 levels of red, green, and blue colors. The MixMaster software lets you program an unlimited number of wipes and other special video effects. The package comes with over 2,800 preset wipe patterns. In addition, you can save settings as "session" files, which you can use immediately or reload later on for editing. The Blender is compatible with other Amiga video peripherals, including digitizers, framebuffers, ADO boxes, and NewTek's Video Toaster. (Progressive Peripherals & Software, 464 Kalamath St., Denver, CO 80204, 303/825-4144.) *RS# 503.*

SPACE AGE LETTERS

With the demand for professional video software on the rise, Kara Computer Graphics recently added two new products to their popular line of custom fontware. **Starfields** ($59.95) are animated starfield background screens you can view from a front, oblique, or side perspective. Each starfield comes in 2- and 16-color versions, and each supports up to two Kara Fonts. **Animfonts 3** ($49.95) provides a metallic-looking, gothic-style Animfont called Capsule, which you can use to add a sparkling effect to your video titles. Both products are compatible with DeluxePaint III and other programs that support the Anim format. (Kara Computer Graphics, 2554 Lincoln Blvd., Suite 1010, Marina Del Rey, CA 90291, 213/578-9177.) *RS# 505.* ►

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*All Tigers **Autoboot, Automount,** and come with a simple to use front end graphics interface **for easy partitioning**. Tigers make excellent second drives plugged into A590, etc.

90MB $599
136MB $699
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Tiny Tiger with front panel LED display is extra $49

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"FANTASTICALLY FANTABULOUS"

The Product That Amazed Visitors To Our Booths At The L.A. & Cologne Ami Expos

YES! Every single pixel on your Amiga screen can be any of **16.8 million colors**. Now you can have color equal to that of a Mac *and* more flexibility. Colorburst is not HAM or Y-C mixing, it is **pure 24 bit RGB** - there is no blurring or loss of definition with colorburst.
Colorburst plugs into every Amiga and goes between the RGB connector and the standard Amiga monitor.

* **Broadcast Quality** Video for PAL & NTSC
* RG&B **Dynamic White Balance** correction.
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* Real time image processing is a reality.
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* **Dynamic Real Time Amiga Graphics Overlay.**
* Includes **24 bit Paint** Package & Loaders for Digiview,Sculpt, etc.
* **1.5 Megabytes** of additional on board chip RAM.
* Colorburst can be written to by the Blitter for hi-speed graphics.
* Colorburst can store up to 4 x 16 million colour frames at once & can do **real time animation** on 4096 colors out of a 16 million palette.
* Real time **Horizontal and Vertical Scrolling.**
* May be used with any **Genlock.**



Colorburst has many applications - one important video application is as a **Professional** frame by frame Video Paintbox,Editing and Special Effects Machine. Its **low price** makes it affordable to most Amiga owners. **The Toaster** is an excellent accessory to use with Colorburst, although there are many more uses than as a front end Video Paintbox to Toaster type effects. **Call for our free color brochure or send $10 (refundable with purchase) for a Video of this spectacular product.**

A2000 SCSI INTERFACES

FIREBALL - True DMA Controller for sustained speed when multitasking **$149.**

TWOfer - For maximum flexibility try our two for one controller. The one card has logic for either an **8 or 16 bit interface.** For the budget minded, an 8 bit controller with **450K** transfer for only **$89** is great value. The speed freaks will love the 16 bit interface - **>950K for only $129**. Naturally, you can upgrade from 8 to 16 bit.

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182 megabytes	$799
340 megabyte	$1599
670 megabytes	$1999
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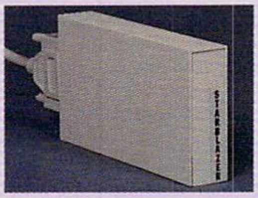
* Lightning fast compiler - up to 16,500 lines of code a minute
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* Integrated Editor/Compiler
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* Supports Dual Playfield, HAM and EHB
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* Includes Sound Sequencer
* Machine language sub-routines can be added
* Spectacular graphics can be generated with minimal commands

$149

Now anyone can produce QUALITY COMMERCIAL CODE.
Order your demo for $5 showing VECTOR BALLS CALCULATED IN REAL TIME. This program alone should convince you of the POWER OF BLITZ BASIC. The source listing will convince you of the SIMPLICITY.
Demo also available through M.A.S.T. BBS (702)359-0132/0137

STARBLAZER A500/1000

external RAM+SCSI+Accelerator box



This compact unit fits snugly beside your A500 or A1000. Don't let its tiny size deceive you - it contains a mighty powerhouse of peripherals. The **Starblazer base unit includes an 8 bit SCSI interface** rated at **450K for $129.** When you need memory you can add up to **EIGHT Megabytes.** The memory is expanded 2Mb at at time using tiny 1"x1" memory boards that use the latest technology **Four Megabit** RAM Chips. Starblazer memory can be configured as 16 or 32 bit wide. **Each 2 Mb module lists at $199.** If 8 bit SCSI isn't fast enough, simply replace the interface with our **16 bit WordMASTer** interface - **another plug-in module** that gives transfers in excess of **950k Bytes** - for only **$89. A 14 Mhz 68000 accelerator** can be added that has full speed access to the 8 Mb RAM, almost doubling Amiga performance - **$89. A 16 Mhz($299) or 25 MHz($399) 68030** accelerator module will shortly be available. **68040** support is a future option. Starblazer passes the bus through for those of you with unusual requirements not taken care of by this amazingly flexible little product.

8 or 16 bit SCSI	8 MB of 0 wait state fast RAM using 4MB chips / CONTROL LOGIC / Pass Thru

Length 8" x Width 2.5"

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brainSTorm

It had to happen and here it is! The MAST ATARI Emulator

Make your Atari friends envious - now your Amiga emulates yet another computer, this time the ATARI. brainSTorm is a software/hardware combination from MAST Germany that runs 98% of Atari software (approx.), including MIDI support. It even emulates the Atari Keyboard click! All programs should run except the very small percentage that do direct DMA or program the MFP. It supports:

* 8mb Fast RAM, 2mb chip ram
* all ST resolutions including color
* full page monitor emulation with scrolling.
* Amiga serial & parallel ports.
* all Amiga drives (df0-df3) simultaneously
* two ST's at same time in one Amiga!
* almost ST speed, text is 120% faster, disk 108%.
* hardware emulates the ST custom chips, has sockets for Atari Roms, and does addr. translation.
* Atari PD support on our BBS.

$99

Atari is a TM of Atari Computers.

S.A.M. $199

MAST Combination SMPTE Time Code Reader and MIDI Interface.

This economically priced unit features a SMPTE to MIDI Time Code Converter with SMPTE IN & SMPTE OUT. Some competitors tie up your favourite computer by having it do most of the work, leaving less time for multitasking and requiring special software support. In contrast SAM has its own dedicated microcontroller with none of these disadvantages. This Professional product has many features:

* Because it converts to industry standard MIDI Time Code it works with any MIDI software that supports MTC.
* SMPTE IN and OUT.
* One MIDI IN and FOUR MIDI OUT.
* Serial THRU - this can be controlled with Software or by a front panel switch!
* Dedicated micro-chip reduces Amiga overhead.
* 24,25,30 & 30 drop frame.
* Reads and Writes Time Code both Forwards & Backwards.
* Can handle tape speeds 0.25% normal speed to 2X (+20%) normal speed. It features extensive error correction.

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All advertised products are in production and available for export, however FCC approval may still be pending on new items as you read this ad - they cannot ship in the USA until approved.

Circle 101 on Reader Service card.

AND THEN SOME

WHAT WOULD YOU say to an expansion board that combines a SCSI disk interface, a memory expander, and a math coprocessor on a single card that fits inside your A500? Spirit Technology now offers the **In-Mate**($549), a multifunction card providing just that. You'll find an auto-booting SCSI interface, sockets for up to 8 MB of RAM expansion, and a place to park your favorite Motorola 68881 math coprocessor chip. Since the board also works with the A2000, it may be just the ticket for those who need to free up an expansion slot. (Spirit Technology, 220 W. 2950 South, Salt Lake City, UT 84119, 801/485-4233.) *RS# 506.*

Blue Ribbon SoundWorks (formerly Blue Ribbon Bakery) is ready to provide professional musicians, MIDI enthusiasts, and educators with a whole new way to play. **Bars & Pipes Professional** ($379) is the first Amiga MIDI sequencer to feature integrated notation. Recorded notes are displayed on screen in standard notation. The assembled notes can then be edited directly from the notation display. Other new features include an event-list editor and MixMaestro, an option that allows you to graphically mix MIDI tracks with control of volume, panning, and other control-change parameters. Existing Bars & Pipes users can upgrade to the new version for $99. (Blue Ribbon SoundWorks, 1293 Briardale, Atlanta, GA 30306, 404/377-2277.) *RS# 507.*

Speaking of firsts, Amiga users now have a complete bar-code scanning system with which to manage and massage their inventories. The **BarPro** system ($899.50) includes an RS-232C-compatible, intelligent bar-code scanning wand with its own external power supply. The full decoding scanning-wand hardware supports UPC, EAN, 39, 25, 25, 93, 128, MSI, and Codeabar formats. BarPro's software creates bar codes on screen in four sizes. You can save them as IFF images, and you can also print them, or execute the scanned bar codes as AmigaDOS commands. (MegageM, 1903 Adria, Santa Maria, CA 93454, 805/349-1104.) *RS# 508.*

Relief for the non-professional designer has arrived. **Graphic Designer** ($125) is a powerful, yet easy-to-use structured drawing program for those who don't have time to learn complex CAD packages, but need accurate drawings. Notable among its features are "smoothable" Bezier curves, multiple layer drawings, and a flexible text-handling system that allows you to use any Amiga font. The program also includes an ARrex port with a complete macro language.

For those Amiga users who don't own the more sophisticated hardware required to run a high-end word processor, there's **Quick Write** ($75). The basic word-processing package includes a "What you see is what you get" (WYSIWYG) display, a mail-merge facility, a 50,000-word spelling checker, macros, file import and export options, an ARexx port, and automatic time and date markers. (New Horizons Software, PO Box 43167, Austin, TX 78745, 512/328-6650.) *RS# 509.*

AudioMaster III ($99.95) is an advanced digital, sound-sampling, editing and manipulation software package that offers Interactive Visual Waveform Editing, a process that lets you load a sound file or digital sample and then display the waveform on screen to add special effects, including echo, backmasking, and low-pass filtering. Other features include multi-loop sequencing and a waveform tuner. (Oxxi, PO Box 90809, Long Beach, CA 90809, 213/427-1227.) *RS# 510.*

Draw it better and faster with **Maxi-Sketch** ($499.95), a 1000-DPI drawing tablet that you can attach to your A500, 1000, or 2000. The auto-configuring tablet requires no software and emulates a variety of other tablets, including Summagraphics, GTCO, Hitachi, HIPAD, CALCOMP, the Amiga keyboard, or the ubiquitous Microsoft mouse. (Centaur Software, 4451-B Redondo Beach Blvd., Lawndale, CA 90260, 213/542-2226.) *RS# 511.*

Would you like to see 300-DPI, full-color printing on your Hewlett-Packard Deskjet printer? You can if you use the **Inkum Color Ink Kit** ($48). With the Inkum kit, you simply print your document in four separate passes, using a different color ink cartridge for each pass. The result is an impressive, full-color printout. (Inkum Inks, 9528 Langston St., Cucamonga, CA 91730, 714/948-2243.) *RS# 512.*

Hopefully, you'll never burn the toast if you use Telegraphics International new series of video cassette training tapes for NewTek's Video Toaster. The tutorials are intended to help videographers, production studios, cable networks, or A/V departments who incorporate the Amiga into their work. Subjects covered in **Volume One** ($49.95) are hardware requirements, production switcher operation, digital effects creation, tips and techniques, framestore applications, linear keying, and more. (Telegraphics International, 605 Dock St., Wilmington, NC 28401, 919/762-8028.) *RS# 513.*

Where can you experience the thrills of climbing the Whatsamatterhorn's dizzying peaks, the distress of exploring mummy-infested caves, or the triumph of capturing the elusive Sausage Lynx on film? Ask Scrooge McDuck—he's entered a contest to circumnavigate the earth seeking such adventures in **Ducktales: The Quest For The Gold** ($44.95). Hint: You must learn to be discreet in order to protect Scrooge's interests from his arch-enemy, Glomgold. (Disney Computer Software, 500 S. Buena Vista St., Burbank, CA 91521, 818/567-5360.) *RS# 515*

It's the Arabian nights all over again—but this time you get to be Valentino. In the **Prince of Persia** ($39.95), you are a young adventurer from a far-off land. Courage, resolve, acrobatic agility, and brains are your best weapons when you enter this exotic and treacherous world to extricate the Sultan's daughter from a nasty predicament. (Broderbund, 17 Paul Dr., San Rafael, CA 94903, 415/492-3200.) *RS# 516*

OK gearhead, it's time to play **Street Rod** ($39.95) from California Dreams. After you buy your first set of wheels, you've got to bore and stroke that engine and chop and channel that body until you're ready to cruise. You build your reputation by drag or road racing until it's time to issue the ultimate challenge—to the King himself. Choose between 25 different cars, over 35 performance parts, five paint jobs, and other radical custom designs.

Strategic Simulations says it means war. In the **Second Front** ($59.95), a World War II re-creation spanning Europe from Berlin to Stalingrad, you command over 150 German and 200 Soviet divisions. Alone or with a friend, you direct land or air operations by excercising complete control over production facilities or, if you prefer, you can succumb to the computer's whims.

Overrun! ($59.95), a modern, land-warfare simulation, pits Europe against the Middle East. Choose from eight preprogrammed scenarios or create your own maps, troops, and missions with the tools provided. (Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171) *RS# 517*

Dirk the Daring lives on! Be the first on your block to play the new animated adventure based on the original arcade game. **Dragon's Lair II: Time Warp** ($59.95) features full-screen animation and digitized sound, with more scenes than any previous animated adventure game. (ReadySoft, 30 Wertheim Court, Unit 2, Richmond Hill, Ont., Canada L4B 1B9, 416/731-4175.) *RS# 518.*

Sweaty palms and near misses are the order of the day in **Highway Patrol II** ($44.95), a driving simulation that pits you against fugitives from justice on the open road. The action gets fast and furious over wide-open deserts and crowded city freeways. (Titus Software, 20432 Corisco St., Chatsworth, CA 91311, 818/709-3692.) *RS# 519.*

Conquer a living world with **Power-Monger** ($49.95), the latest work from Bullfrog, the UK artists group that brought you the mega-hit, Populus. The vividly rendered 3-D game casts you as the leader of a displaced tribe newly arrived in uncharted territory, which you conquer by any means; kindness, force, negotiation, or outright bribery. Sounds like the real world to me. (Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171.) *RS# 520.*

Here we go again! Broderbund's latest in the Carmen series, **Where in Time is Carmen Sandiego?** ($44.95), shuttles you back and forth in time as you pursue the wily lady and her gang from 400 A.D. through the 1950s. During the chase, you get to know many of history's most famous people, events, and inventions. To help you unravel the clues, there's also a copy of the 1300-page New American Desk Encyclopedia. (Broderbund Software, 17 Paul Dr., San Rafael, CA 94903, 415/492-3200.) *RS# 521.*

Picture yourself in the year 2238, living on a planet ruled by TV networks and defense industries. In **Thunderstrike** ($39.95), the winner of the Defense Olympics rules the world. You fly a sleek jet fighter as you participate in a deadly competition for power and glory. (LIVE Studios, 30151 Branding Iron Rd., San Juan Capistrano, CA 92675, 714/661-8337.) *RS# 522.*

Attention electronic linksters! Now available for your golfing (and duffing) pleasure is **Jack Nicklaus Presents the Major Championship Courses of 1990** ($21.95). The third in a series of add-on course disks for Jack Nicklaus' Greatest 18 Holes of Championship Golf, the package contains simulations of the host grand-slam courses of this year's U.S. Open, British Open, and PGA Championships. (Accolade, 550 S. Winchester Blvd., Suite 200, San Jose, CA 95128, 408/296-8400.) *RS# 523.* ■

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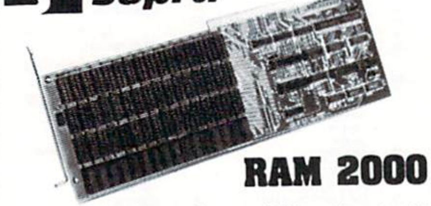
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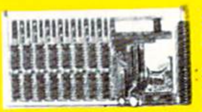


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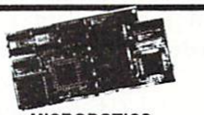


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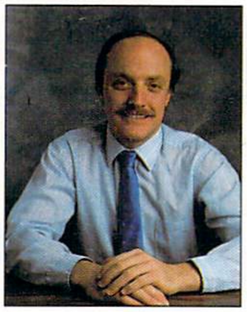
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THE PD PROSPECTOR



A quick look at what's new, interesting and exciting on the major nets.

Compiled by Tim Walsh

Winter days are here again, and there's no better time to check out the files listed below with file numbers and library locations.

People/Link

AIBB201.LZH (AmigaZone Section 4, File #25424) Version 2.01 of AIBB—an Intuition-based program for benchmarking system performance.

FIXDISK1.2.LZH (AmigaZone Section 4, File #25408). Disk-salvaging utility that serves as a handy complement to both DiskSalv and DiskDoctor.

LOCKDEVICE.LZH (AmigaZone Pro Section 5, File #2645) Avoids loss of data by preventing the hard disk from being accidentally formatted.

BOOTCACHE.LZH (AmigaZone Pro Section 5, File#2625) BootCache disables processor caches on 68030-equipped machines for program compatibility.

Scanning P/Link's vast Amiga libraries reveals an all-time high of uploading activity of quality programs, thanks in large part to Harv Laser.

CompuServe

FILEMA.LZH (AmigaTech, Library 1) Super Fileman Version 1.11. Archive, sort, copy and catalog are but a few of the options provided by this shareware disk utility.

LISTX.LZH (AmigaTech, Library 1) Replacement for the AmigaDOS List command that provides an informative breakdown of directories.

PPMORE.LZH (AmigaUser, Library 7) Enhanced text reader that's similar to the program More.

GRAMMA.LZH (AmigaUser, Library 7) Discover how your grammar compares to that of Steinbeck, Hemingway, and a major computer publication.

Recent e-mail from assistant sysop Betty Clay reveals that the most popular file in CompuServe's AmigaTech area has been NEWALE.ZOO (Library 11) which interprets gurus.

GEnie

DEK111.LZH (Amiga Library 4, File #9514) Disk and file editor. Use it to fix errors and recover deleted files.

TAPRISKA.LZH (Amiga Library 4, File #9513) Version 1.1 of TAPRISKA. Lists background tasks for both identification and modification.

JOY_MOUSE_SWAP.LZH (Amiga Library 4, File #9502) This unique CLI-based routine toggles between ports so that you can control with either a mouse or joystick.

HD_FLOPPY.LZH (Amiga Library 11, File#9499) Use this device driver to mount a simulated floppy-disk drive on your Amiga's hard-disk drive.

GEnie is now offering a service whereby e-mail messages can be forwarded to friends and relatives stationed in Saudi Arabia. Log on for specific details.

Prospector's Perch: Got a modem? Become a telecommie power user!

THERE'S A LOT to be said for telecommunications. If you've hesitated to explore networks with your Amiga for fear of invading the domain of elite groups of Amiga enthusiasts, then you've been misinformed. The nets are not composed of techies sharing obscure programming techniques and complex video and computer interfacing. Rather, most of the so-called telecommies in the Amiga areas on the nets are Amiga users of average levels of expertise. You should really endeavor to view their domain as a fast, easy and truly useful resource of freely-distributable files that make life more pleasant with your Amiga.

Suppose you inadvertently delete an important directory on your Amiga at 10:30 on a Sunday night. Your boss needs that report at 7:30 sharp on Monday morning. If you're equipped to do so, you log on to your favorite network, find a disk-salvage utility, and in a matter of minutes you've recovered the lost information. If you don't have a modem, well, maybe you can call in sick and say the blister on your mouse finger flared up.

Or let's say that you're putting together a multimedia or video presentation and need a crucial piece of clip art or a background to make the graphic complete. Again, log on and find some terrific art work to download. Best of all, there are always plenty of friendly folks willing to help out on the nets.

Over the years, the nets have saved me countless hours of research, and I've made friends, sent files to and from other telecommies and generally simplified nearly every aspect of my computer life. Time and again I've turned to one of the networks to find that elusive file. True, you may find the same files offered by PD disk collections, but when time is of the essence, telecommunicating is the answer.

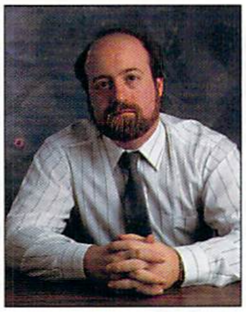
If you're interested in establishing an account on any of the above networks, here are the voice numbers to call to get under way:

CompuServe: 800/848-8199
614/457-8650 from Ohio

American People/Link: 800/524-0100

GEnie: 800/638-9636

Next month: Music and sound. ■



HELP KEY

From the dawn of (Amiga) time to the cutting edge, Lou is ready to quip a tip on any subject.

By Louis R. Wallace

TROUBLING TRIO

Q: *I have three questions: Can the Amiga 500 use the new ECS chips? Can the Amiga 500 use the new Amber chip to de-interlace its display? If the Amiga 500 cannot use Amber, would the Rejuvenator board allow it to do so?*

T. Fearman
Flin Flon, Manitoba

A: The answer to your first question is certainly, the A500 could use the ECS, but the real question is will it? There is no technical difficulty in the issue, for the A500 is really the same computer as the A2000, differing essentially only in the design of its box and the ease of expansion. Both can use the new chips.

Rumor has it that some discussion is going on at Commodore about this. A few people there believe it would be better to keep the more advanced Amiga 2.0 Operating System (Amiga OS) and the ECS for the professional series of Amiga (the A2000, A2500, A3000, and so on) and to let the A500 line use 1.3 and the existing chip set. Their arguments are that this will ensure compatibility for the large line of entertainment products for the A500 while helping to differentiate the high end machines from the low.

Based on what I have heard, however, this "separation of product lines" will not come to pass. As soon as Amiga OS 2.0 is complete and in ROM, 2.0 enhancer packages will appear at dealers for both the A500 and the A2000 series, complete with the new ECS and 512K ROMS.

The answer to your second question is not as encouraging. The Amber chip was designed for creating de-interlaced displays for the A3000 and was used in the new A2320 display enhancer for the A2000. As far as I know, Commodore plans no such device for the A500.

Don't despair: The Rejuvenator board could use the A2320 card (which has Amber on it). The A2320 is only for the A2000, however, not the A500. At the recent AmiEXPO in Anaheim, CA, ICD (1220 Rock St., Rockford, IL 61101, 815/968-2228) demonstrated an internal de-interlacer that would work on the A500, A1000 and A2000 line. With one of these internal cards and a multiscan monitor, anyone can enjoy de-interlaced displays.

HISTORICAL DIG

Q: *Where can I get a Version 1.1 Kickstart and Workbench for my A1000?*

J. Barzkowski
San Francisco, CA

A: Hmmm. I guess you want to use some of the older software that doesn't run properly under the 1.2, 1.3, or 2.0 operating systems. First, check with the Amiga dealers in your area. I also recommend that you find and join a user group (San Francisco has several good ones). There you are bound to find someone who has the 1.1 operating system.

UNENHANCED

Q: *Help! I just bought the A2300 genlock for my A3000 and am having some problems. When I have the monitor (an A1950 multiscan monitor) connected to the genlock, it works fine as a NTSC display. Doing this, however, I can't take advantage of the display enhancer, because the monitor is connected to the genlock output and not the VDE output. Again no problem, all I have to do is disconnect the monitor from the genlock and connect it to the VDE output when I want de-interlaced displays, right? Wrong! My screen is scrambled when I do that. If I use the A2300 genlock, does it prevent me from using the display enhancer as long as the genlock is installed?*

F. Hollings
Tampa, FL

A: Not at all. You can still use the display-enhanced video in the A3000 when the genlock is installed, but there is a little trick to getting it to work. When you are not using the genlock, just switch the monitor cable from the genlock to the VDE display port. Next, connect a synced video source to the genlock. As long as the genlock is getting video in, the display enhancer in the A3000 will work fine. The trick is to keep video coming in to the A2300, even when not using it.

A note to A3000 owners with A2300 genlocks: There is a modification required to older A2300s before they are fully A3000-compatible. If yours has not been modified, see a service center about it. They should have received information and instructions from Commodore on making the change.

'VISION PROBLEMS

Q: *I just got AmigaVision (version 1.53G), and I am having a bit of a problem using the Text Icon. According to the manual (page 4.42), to make the text window scroll, I use a Response of page up, page down, line up, or line down. I have tried these, and they don't work. However, quit works just fine. Solution, please?*

S. DeBoise
Dallas, TX

A: The reference on that page of the AmigaVision manual is incorrect. The correct Response should be pageup, pagedown, lineup, or linedown, all without spaces. You will find it explained correctly on page 6-107. ■

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Featured Disk

WB12: Disk Utilities #1- This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery, archiving and organizing, and all sorts of file and directory manipulation. Incudes SID, greatly reduces CLI use.

New Disks

FD43: Game tricks/hints - a disk full games cheats, hints, and backdoors for all of your favorite games. Hints for shadow of the beast, dungeon master, space ace, leisure suit larry, moria, neuromancer, and over 300 more games.
FD44: Game - Mechfight is an out of this world role-playing adventure comparable to hack and moria. The setting, interplanetary colonies and space stations. In your quest to explore the world, take time out to liberate bad guys of their most valuable possessions, engage in a mortal combat or two against robots and alien life forms, pick up a new amiga 9000. Most of all, don't forget to stay alive...
FD45: Arcade - Three good shoot'em ups. Batman - save the city from the Joker, DriveWar - gangsters are moving in on your territory, stop them at all costs, Web - a spidery, bug affair of eat or be eaten.
WB72: Directory Utilities - The programs on this disk are very powerful and come highly recommended. They are designed to make CLI and shell tasks virtually obsolete. These programs make the Amiga much easier to learn and use. From the workbench environment, do file and directory manipulation include coping, deleting, moving, display text, edit text, view images, playing sounds, create directories, find files, group unarceiving, with many user definable functions and options, and much much more.
WB73: KeyBoard Utilities and more - Dmouse - one of the most useful type programs available, contains an all in one, mouse excellarator, screen blanker, Shell evoker, Function key defines, and more, KeyMacro - set up macro definition for any keystroke combination, KeyMapED - remaps the key board display to any user definable character. Also Ntsc-Pal - converts any european (pal) or US (ntsc) to your standard, Pbar - window pull down bar paint program, and TPjr - a full featured video titler.
WB74: 3000 Utilities - several programs for the Amiga 3000 user. MachIII - our favorite mouse, hotkey, screen blanker, autoCLI and autopoint all in one program, Iconize - a 16 color icon editor, Blanker - starfield screen blanker, NoClick - stop drive clicking, ReMapIcon - covert 1.3 icons to 2.0, and more.
WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss) for your music programs.
DD74: Arexx examples/utilities #3 - several working examples and programs to aid the arexx user and programer.

Other Great Disks -

FD5: Tactical Games - BullRun - a Civil war battle game, Metro - you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very very habit forming.
FD6: GAMES! - This disk is chock full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.
FD7: PACMAN - This disk contains several pacman type games including; PacMan87, MazMan and Zonix.
FD9: Moria -. This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!
FD10: HackLite - A dungeon adventure game. Considered a must-have classic. This is the second release of this game on the Amiga. Great Amiga graphic interface. Play time several weeks!
FD12A,FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).
FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoids, and others.
FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arkanoid/breakout type game, Trix - a Qix type clone.
FD16: Strategy Games - Includes Diplomacy and Empros, both great conquer and rule multiplayer games similar in concept to Simcity and Populace. Also includes blackbox, hearts, and others.
FD17: Educational Games - This disk includes several games for the younger members including geography, math, science, and word games, also includes Wheel of Fortune.
FD20: Tactical Games - MechForce(3.72); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.
FD29: Shoot'em up's - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on you mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.
FD32:Flight Simulator - Includes an instrument flight simulator for a DC10.
FD33: Arcade Games - Ffreddy a mario brothers type of game, Gerbils a target practice game, PipeLine a German interpretation of Pipe Dreams, Tron a light cycles version, and wetroids a wonderful version of asteroids with a hilarious twist.
FD37a & b:Tactical Games - Empire (2.2w) This game comes highly recommended. Now with a full-featured graphic front end. Empire is a rich simulation of international politics, economics and war, which is played over a period of a few of months by 2 or more people. Players can run their countries from the normal Amiga keyboard, or via a modem at 300 to 2400 baud. Counts as two disks.
FD38:Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card came, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.
FD39a & b:Tobias Star Trek - This is a new, completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Now with English instructions. Very Excellent!!! Counts as two disks. Requires 512k memory, and a 500, 2000 or Pal Amiga.
FD40:Arcade - MiddleEast - a timely arcade game of death and destruction set in Iraq, BackToTheFutureII - a very playable demo version of this soon to be released commercial game, City - a missile command clone.
FD41:Games - Includes Capital Gains - a stock market game, Ball a Arknoids type of clone with many great twists, and Desert Shield - a shoot'em up with a destroy and conquer theme.
FD42:Games - Includes SpaceWar3 - a remake of this original Amiga classic, Trippin - a fascinating board game of intrigue, strategy, and player manipulation, Dominion - an engrossing strategy game of galactic war and conquest, Frog - a frogger type clone, and Mines - a very challenging strategy board game.
WB4:Telecommumnication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily, Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - Last version of one of the best public domain communications programs ever made on the Amiga, Handshake (2.12a) Handshake is a Full featured VT52/100/102/220
WB5 - Fonts #1- Several fonts (35) for the Amiga, also included are five PageStream fonts,and ShowFont - a font display program.
WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.
WB10:Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3).
WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, with PrtDrvGen you can make your own.
WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).
WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/schedular, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.
WB18: Word/Text Processors - This disk contains the best editors. Includes,TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features,TexED(v2.8) an enhanced Emacs type editor, and a spell checker.
WB20: General Interest - DiskSalv V1.42 a disk recovery program for all Amiga file systems, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3DLookt gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of an image.
WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map iff image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere, great for DTP .
WB25:Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.
WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor, Labelprinter - Disk label printer with very powerful features.
WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.
WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk, you'll love it!
WB33:Circuit Board Design - several terrific routines for the electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.
WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbenck screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphics.
WB38: Plotting and Graphics - Plotxy is the most powerful full featured plotting package. Used by many colleges and universities. A welcome addition to our library! Highly recommended. Plans - a incredibly well done Computer Aided Drafting program, very full featured. Tesselator - a program that helps generates fantastic looking, recursive M.C. Ecsher type pictures.
WB39: Music - Intuitracker is an German offer of an exquisitely well done program that allows you to play music on your Amiga with CD like controls. Lets you strip out music from your favorite games or others and include them in your music library.
WB40: Music - "CD on a disk", 90 minutes of modern music on this well presented collection.
WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful, easy to use program.
WB43:Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package.
WB53:Graphics- The disk contains C-light - The easiest to use raytracing we have seen to date. This one started out life as a full featured commercial product similar to Sculpt3d. Raytracing programs can generate stunning, realistically shaded objects. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...
WB54:Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and many more.
WB55:Application - XCopyIII - a full featured disk copier, make backups of write protected disks. RoadRoute - find the quickest route from one city to another, highway description included, Diary - a diary program like "Dougy Howard M.D", Cal - a calendar program, Magman - a database tailored to maintain records on articles and publications.
WB71:C64 Emulation - The A64 Package is a complete, very powerfull, Commodore 64 emulator.
DD47: Pascal - This disk contains everything needed to program in Pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.
DD49: C Compiler - contains zc(1.01) fully K&R, zcc(1.0) front end, A68k(1.2) assembler, Blink linker.
DD51: Circuit Analysis - Aspice (2.3) A full featured program for electric circuit analysis.
DD52: Scientific - Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source routines that can be included in your own programs.
DD54: Compression - This disk is loaded with ALL of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), Lharc(1.0), Lhwarp(1.03), Pkax(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFcrunch an excellent compression for IFF files.
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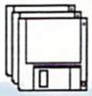
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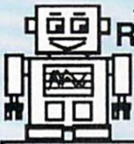
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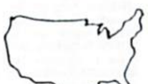
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EAR TO THE WALL

Lapsing laptop. Many months ago, we reported that the German-based company, Gigatron, was developing an Amiga laptop. The latest information reveals that the combination of technical problems and legal hassles from Commodore in Germany has apparently closed the lid on the project.

Legal lollygagging. We are hearing rumors of legal wrangling over Atari-ST emulation for the Amiga. As expected, Atari is reportedly trying to block the project.

Golden opportunities. Productivity software developer Gold Disk has announced a contest to promote its latest offering, HyperBook, a graphic presentation program. A presentation disk created with HyperBook is being made available free with Gold Disk products, through both dealers and mail order. At the end of the presentation, a screen appears that indicates whether that disk is a winner and what the prize is. Prizes include Sony Discmans, posters, tee-shirts and more.

Speaking of Gold Disk, we misstated the price of ProDraw 2.0 in our December '90 review. The product's correct retail price is now $199.95.

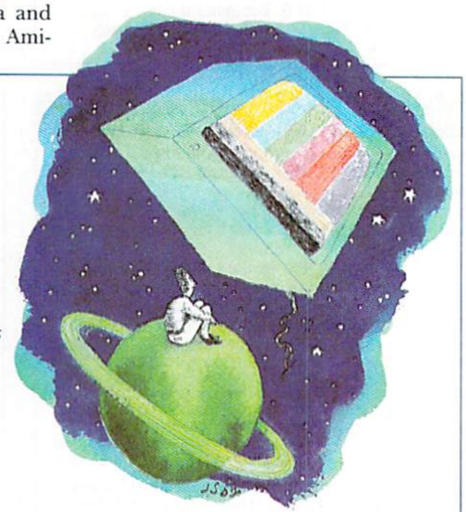
How's your résumé? In the December issue of *AmigaWorld*, we reported the exodus of several key Commodore marketing executives and product managers. As of press time, there is still no word on possible replacements or whether Commodore plans to reshuffle the deck.

Fame? What's your name. . .? We keep hearing of more celebrity Amiga users. Apparently country stars Alabama and rock-legend Robert Plant both use Amigas for onstage MIDI and visual work.

Where art thou, Unix? Commodore, which has been demonstrating Unix for more than a year, has overshot its promised fall announcement. AT&T's sluggishness in finalizing Unix 5.4 code and Commodore's own marketing and support stumbling blocks are blamed for the setback. The firm is, however, shipping pre-release systems to educational customers, and reportedly is building a beefier Unix support group within CATS.

Editor's note: Last month, we inadvertently credited the Soap Box illustration to the wrong artist. The credit should have gone to Michael Klein.

SOAP BOX



EDITOR'S NOTE: Each month in this new department, we will present an opinion piece—an essay, really—that we hope will provide food for thought for members of the Amiga community. Essays will come from a variety of different members of that community: AW *editors and readers, Amiga users and developers, or even a spokesperson from Commodore on occasion. We welcome feedback from all quarters; perhaps some of the responses may become the basis for future "Soap Box" essays. If you would like to reply to any opinions expressed here, please write to Jan Jackson, "Soap Box,"* AmigaWorld, *Elm St., Peterborough, NH 03458.*

Homing in on the Future

A portrait: *Everyone was busy at the Smiths' house when Bob got home from work. While Johnny waged interactive-video war on his Amiga 9000, Susie stared rapturously into her latest boyfriend's eyes on her networked A9500's visual phone. Passing on to the kitchen, Bob clearly heard Mary and a strange man speaking in tongues—French perhaps?—something about preparing sauce béarnaise. Realizing it was only Chef Pierre's Interactive Haute Cuisine video disk playing on Mary's countertop A5000, Bob punched "p" to pause Pierre in mid-whisk, pecked his wife's cheek and headed for the living room and his wall-mounted A10000.*

Shutting down the French Provincial Mansion image left over from last night's dinner party, Bob booted the Hawaiian lagoon optical disk. Instantly, the living room was transformed into a lush, tropical paradise with a waterfall cascading into a clear, blue pool. "Real soothing," he thought, kicking off his shoes. "Now where's that video editing program? I'd like to polish up that tape of Johnny's last Little League game before Mary's parents come over this weekend."

A charming domestic picture of the future, but the Amiga's role in this scenario is in serious jeopardy. The home has long been the source of most Commodore US sales, mainly because IBM never considered it important. Multimedia, however has changed that kind of thinking. Now, IBM is moving into the home multimedia battle with all guns blazing. And if Commodore does nothing, Amiga sales may cease altogether. That means no more new software or hardware.

Although Big Blue is an awesome foe, Commodore can take a lesson from Apple about carving out some special territory for the Amiga. When Apple launched the Mac, it realized the futility of trying to compete with IBM on all fronts. So the company focused on one key area, desktop publishing, and devoted more resources to it than IBM was willing to do. Apple thus established a foothold and built it up from there. That's exactly what Commodore must do with video.

America is ready for a home-video computer—just look at the success of home-video shows—and Commodore should reap the benefits. Remember, the Amiga has a head start. We already have high-end video-effects devices and highly specialized animation programs and editors. But that's not enough. Commodore must focus all its energies now, before the company loses its edge.

We can help Commodore. If you would like a future version of your favorite software to run on the A10000, advance to the battlefield now and fire a shot. Ask local video dealers, "Do you carry the Amiga computer from Commodore?" If they do, ask for a demonstration. If you discover that you know more than they do, teach them. If they don't carry it, simply say, "Well, I heard it was a video computer!"

The future of home video is almost here. If you're like me, you know the Amiga deserves a place right in the middle of it. Help make it happen.

—Brian Sarrazin
Free Spirit Software

ILLUSTRATED BY JOHN DYKES

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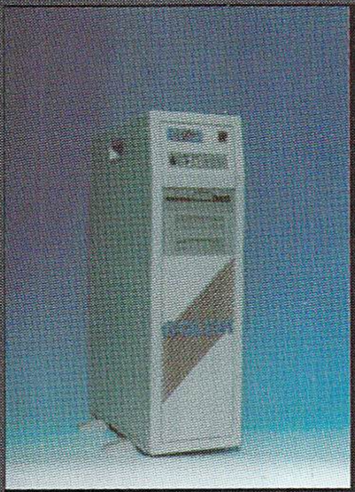






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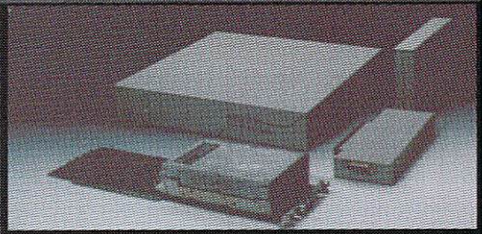
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Just The Facts:

What Makes Digi-Paint 3 the Ultimate Paint Program?



"Finding the best paint program for your Amiga can be confusing, but once you have the facts it's simple."

Laura Longfellow
Sales Manager
NewTek Inc.

"Why is Digi-Paint 3 better than DeluxePaint III™?"

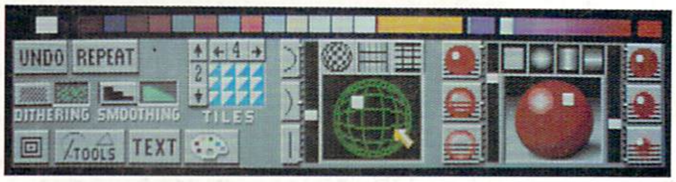


Digi-Paint 3 works in the Amiga's powerful Hold And Modify (HAM) mode, which allows you to paint using all 4096 colors simultaneously. By comparison, Deluxe Paint III (by Electronic Arts) operates in less sophisticated modes, restricting you to a maximum of only 64 colors. Advanced features available in Digi-Paint 3 – including Colorizing, Variable Transparency, Shading, Lighten, Darken and Range Painting – are simply not possible in Deluxe Paint III due to its 64 color limitation. AMIGAWORLD warns, "Competitors may want to head back to the drawing board, because Digi-Paint 3 is hard to beat!"

"What makes Digi-Paint 3 better than other HAM paint programs?"

Digi-Paint 3 is the only Amiga paint program written in 100% assembly language. Although challenging to program (taking up to 10 times longer than other computer languages), it's the only way to achieve the incredible speed found in Digi-Paint 3. AMIGAWORLD calls it "the fastest HAM paint program yet" and AMIGA SENTRY estimates it's, "6-10 times faster" than the nearest contender.

Other advanced features found *only* in Digi-Paint 3 include: anti-aliased texture mapping, anti-aliased fonts, ARexx support, 1024 x 1024 super bitmaps with auto-scrolling and dithering to 30 bits per pixel (over a billion colors internally, giving you tens of thousands of apparent colors). COMPUTER SHOPPER magazine reports "Digi-Paint 3 is without a doubt the most advanced HAM paint program to date!"



"But is Digi-Paint 3 easy to use?"

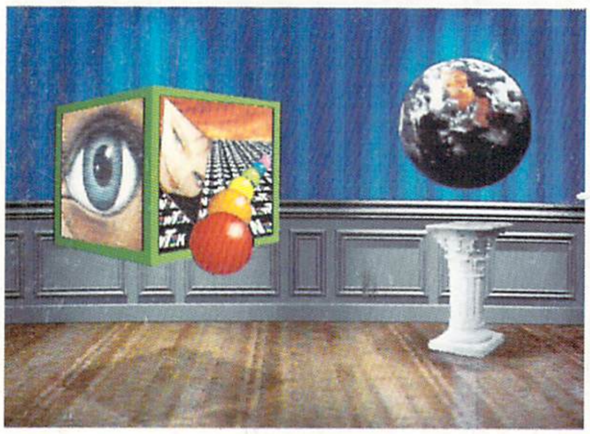
I've learned that no matter how powerful a program is, if it's not friendly it's not worth my time. We designed Digi-Paint 3 with all users in mind – from the beginner just starting out with computers, to the "power user" who demands the most advanced features possible. The spiral-bound manual contains a step-by-step Guided Tour, 11 hands-on tutorials, a color coded reference card, and almost one hundred example photos.

Digi-Paint 3's intuitive user interface was created by Digi-View designer (and NewTek Founder) Tim Jenison and renowned Amiga artist Jim Sachs. It features innovative "Dashboard" controls which AMIGAWORLD regards as "a joy to use" and "very easy to learn and understand". INFO MAGAZINE says the new interface "looks great and works logically".



"What is the Transfer 24 program included with Digi-Paint 3?"

Transfer 24 is a separate program disk included in the Digi-Paint 3 package, allowing you to alter any picture's brightness, color saturation, contrast, hue and sharpness, almost as easily as adjusting the controls on your television set. Transfer 24 also lets you modify the size, palette, and resolution of any picture. These powerful features, known as "Image Processing", give you incredible control over your final artwork. You can also save your image in any of the Amiga's 24 resolution modes (up to 768x480) making it compatible with all Amiga graphics software. AX MAGAZINE notes that "Transfer 24 gives you even more options as to the final appearance of your work". AMIGAWORLD declares, "Transfer 24 is great for making overall changes."



"What technical support does NewTek offer?"

Digi-Paint 3 has one other thing you won't find in any ordinary paint program: a toll-free help line. If you should have any questions while using Digi-Paint 3, you're not on your own. Call NewTek's technical support team at 1-800-736-7617 Monday through Friday, 8 am -7 pm Central Time.

Digi-Paint 3 is available now at your local Amiga dealer or call
1-800-843-8934 or **1-913-354-1146.**

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